

Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-01-A/2.0-2.5	SED-01-B/2.0-2.5	SED-01-C/2.0-2.5	SED-02-A(R)/0.5-	SED-02-A(R)/6.0-	SED-02-B(R)/0.5-	
					1.0	6.5	1.0
Date Sampled:	9/23/2019	9/25/2019	9/23/2019	9/27/2019	9/27/2019	9/27/2019	9/27/2019
Depth (ft):	2-2.5	2-2.5	2-2.5	0.5-1	6-6.5	0.5-1	
LAB Sample ID:	1157567	1159745	1157564	1162107	1162108	1162111	
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M													
Acetone	67-64-1	--	--	0.065		0.066		0.025	J	0.4	U	0.82	U	0.052	J	
Benzene	71-43-2	0.34	--	0.001	U	0.01	J	0.001	U	0.034	U	0.068	U	0.001	U	
Bromochloromethane	74-97-5	--	--	0.002	U	0.001	U	0.001	U	0.04	U	0.082	U	0.002	U	
Bromodichloromethane	75-27-4	--	--	0.001	U	0.0009	U	0.0009	U	0.027	U	0.054	U	0.001	U	
Bromoform	75-25-2	--	--	0.014	U	0.012	U	0.011	U	0.34	U	0.68	U	0.013	U	
Bromomethane	74-83-9	--	--	0.002	U	0.002	U	0.002	U	0.047	U	0.095	U	0.002	U	
2-Butanone (MEK)	78-93-3	--	--	0.017	J	0.051		0.002	U	0.067	U	0.14	U	0.003	U	
Carbon Disulfide	75-15-0	--	--	0.002	J	0.003	J	0.009	J	0.069	J	0.1	J	0.006	J	
Carbon tetrachloride	56-23-5	--	--	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.001	U	
Chlorobenzene	108-90-7	--	--	0.001	U	0.019		0.001	U	0.034	U	0.068	U	0.003	J	
Chloroethane	75-00-3	--	--	0.003	U	0.002	U	0.002	U	0.067	U	0.14	U	0.003	U	
Chloroform	67-66-3	--	--	0.002	U	0.001	U	0.001	U	0.04	U	0.082	U	0.002	U	
Chloromethane	74-87-3	--	--	0.002	U	0.001	U	0.001	U	0.04	U	0.082	U	0.002	U	
cis-1,2-Dichloroethene	156-59-2	--	--	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.001	U	
cis-1,3-Dichloropropene	10061-01-5	--	--	0.001	U	0.0009	U	0.0009	U	0.027	U	0.054	U	0.001	U	
Cyclohexane	110-82-7	--	--	0.002	J	0.026		0.001	U	0.034	U	0.11	J	0.003	J	
1,2-Dibromo-3-chloropropane	96-12-8	--	--	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.001	U	
Dibromochloromethane	124-48-1	--	--	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.001	U	
1,2-Dibromoethane	106-93-4	--	--	0.001	U	0.0009	U	0.0009	U	0.027	U	0.054	U	0.001	U	
1,2-Dichlorobenzene	95-50-1	--	0.013	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.001	J	
1,3-Dichlorobenzene	541-73-1	--	--	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.004	J	
1,4-Dichlorobenzene	106-46-7	--	0.11	0.001	U	0.01	J	0.0009	U	0.027	U	0.054	U	0.018		
Dichlorodifluoromethane	75-71-8	--	--	0.002	U	0.001	U	0.001	U	0.04	U	0.082	U	0.002	U	
1,1-Dichloroethane	75-34-3	--	--	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.001	U	
1,2-Dichloroethane	107-06-2	--	--	0.002	U	0.001	U	0.001	U	0.04	U	0.082	U	0.002	U	
1,1-Dichloroethene	75-35-4	--	--	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.001	U	
1,2-Dichloropropane	78-87-5	--	--	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.001	U	
1,3-Dichloropropene (total)	542-75-6	--	--	0.003	U	0.002	U	0.002	U	0.061	U	0.12	U	0.002	U	
Ethylbenzene	100-41-4	1.4	--	0.001	U	0.005	J	0.0009	U	0.027	U	0.054	U	0.001	U	
2-Hexanone	591-78-6	--	--	0.003	U	0.002	U	0.002	U	0.067	U	0.14	U	0.003	U	
Isopropylbenzene	98-82-8	--	--	0.001	U	0.016		0.0009	U	0.027	U	0.076	J	0.002	J	
Methyl Acetate	79-20-9	--	--	0.003	U	0.002	U	0.002	U	0.17	J	0.64	J	0.003	U	

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-01-A/2.0-2.5	SED-01-B/2.0-2.5	SED-01-C/2.0-2.5	SED-02-A(R)/0.5-	SED-02-A(R)/6.0-	SED-02-B(R)/0.5-	
				1.0	6.5	1.0	
Date Sampled:	9/23/2019	9/25/2019	9/23/2019	9/27/2019	9/27/2019	9/27/2019	
Depth (ft):	2-2.5	2-2.5	2-2.5	0.5-1	6-6.5	0.5-1	
LAB Sample ID:	1157567	1159745	1157564	1162107	1162108	1162111	
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M																	
Methyl Tert Butyl Ether (MTBE)	1634-04-4	--	--	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.001	U					
4-methyl-2-pentanone (MIBK)	108-10-1	--	--	0.003	U	0.002	U	0.002	U	0.067	U	0.14	U	0.003	U					
Methylcyclohexane	108-87-2	--	--	0.004	J	0.12		0.001	U	0.13	J	0.83			0.025					
Methylene chloride	75-09-2	--	--	0.006	U	0.005	U	0.004	U	0.13	U	0.27	U	0.005	U					
Styrene	100-42-5	--	--	0.001	U	0.0009	U	0.0009	U	0.027	U	0.054	U	0.001	U					
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.001	U	0.0009	U	0.0009	U	0.027	U	0.054	U	0.001	U					
Tetrachloroethene	127-18-4	0.45	--	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.001	U					
Toluene	108-88-3	2.5	--	0.002	U	0.002	J	0.001	U	0.04	U	0.082	U	0.002	J					
trans-1,2-Dichloroethene	156-60-5	--	--	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.001	U					
trans-1,3-Dichloropropene	10061-02-6	--	--	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.001	U					
Freon 113	76-13-1	--	--	0.002	U	0.001	U	0.001	U	0.04	U	0.082	U	0.002	U					
1,2,3-Trichlorobenzene	87-61-6	--	--	0.014	U	0.012	U	0.011	U	0.34	U	0.68	U	0.013	U					
1,1,1-Trichloroethane	71-55-6	--	--	0.002	U	0.001	U	0.001	U	0.04	U	0.082	U	0.002	U					
1,1,2-Trichloroethane	79-00-5	--	--	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.001	U					
Trichloroethene	79-01-6	1.6	--	0.001	U	0.001	U	0.001	U	0.034	U	0.068	U	0.001	U					
Trichlorofluoromethane	75-69-4	--	--	0.002	U	0.002	U	0.002	U	0.047	U	0.095	U	0.002	U					
1,2,4-Trichlorobenzene	120-82-1	--	0.0048	0.014	U	0.012	U	0.011	U	0.34	U	0.68	U	0.013	U					
Vinyl Chloride	75-01-4	--	--	0.002	U	0.001	U	0.001	U	0.04	U	0.082	U	0.002	U					
m,p-Xylene	179601-23-1	--	--	0.003	U	0.044		0.002	U	0.067	U	0.69		0.003	U					
o-Xylene	95-47-6	--	--	0.001	U	0.055		0.0009	U	0.027	U	0.87		0.002	J					
Xylenes (total)	1330-20-7	0.12	--	ND		0.099		ND		ND		1.56		0.002						
Total VOC TIC	SRP170	--	--	ND	U	8.4	J	0.38	J	28	J	74	J	6.1	J					

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Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-02-B(R)/3.5-	4.0	SED-02-C(R)/0.5-	1.0	SED-02-C(R)/2.0-	2.5	SED-03-A/6.0-6.5	SED-03-B(R)/1.5-	2.0	SED-03-B(R)/4.5-	5.0
Date Sampled:	9/27/2019		9/27/2019		9/27/2019		9/30/2019		9/30/2019		9/30/2019
Depth (ft):	3.5-4		0.5-1		2-2.5		6-6.5		1.5-2		4.5-5
LAB Sample ID:	1162112		1162104		1162105		1163618		1163621		1163622

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
Acetone	67-64-1	--	--	0.56	U	0.6	U	0.69	U	0.89	U
Benzene	71-43-2	0.34	--	0.047	U	0.05	U	0.18	J	0.074	U
Bromochloromethane	74-97-5	--	--	0.056	U	0.06	U	0.069	U	0.089	U
Bromodichloromethane	75-27-4	--	--	0.037	U	0.04	U	0.046	U	0.059	U
Bromoform	75-25-2	--	--	0.47	U	0.5	U	0.58	U	0.74	U
Bromomethane	74-83-9	--	--	0.065	U	0.07	U	0.081	U	0.1	U
2-Butanone (MEK)	78-93-3	--	--	0.094	U	0.099	U	0.12	U	0.15	U
Carbon Disulfide	75-15-0	--	--	0.056	U	0.88	--	1	--	0.089	U
Carbon tetrachloride	56-23-5	--	--	0.047	U	0.05	U	0.058	U	0.074	U
Chlorobenzene	108-90-7	--	--	0.047	U	0.05	U	0.058	U	0.074	U
Chloroethane	75-00-3	--	--	0.094	U	0.099	U	0.12	U	0.15	U
Chloroform	67-66-3	--	--	0.056	U	0.06	U	0.069	U	0.089	U
Chloromethane	74-87-3	--	--	0.056	U	0.06	U	0.069	U	0.089	U
cis-1,2-Dichloroethene	156-59-2	--	--	0.047	U	0.05	U	0.058	U	0.074	U
cis-1,3-Dichloropropene	10061-01-5	--	--	0.037	U	0.04	U	0.046	U	0.059	U
Cyclohexane	110-82-7	--	--	0.047	U	0.05	U	0.058	U	0.71	J
1,2-Dibromo-3-chloropropane	96-12-8	--	--	0.047	U	0.05	U	0.058	U	0.074	U
Dibromochloromethane	124-48-1	--	--	0.047	U	0.05	U	0.058	U	0.074	U
1,2-Dibromoethane	106-93-4	--	--	0.037	U	0.04	U	0.046	U	0.059	U
1,2-Dichlorobenzene	95-50-1	--	0.013	0.047	U	0.05	U	0.058	U	0.074	U
1,3-Dichlorobenzene	541-73-1	--	--	0.047	U	0.051	J	0.058	U	0.074	U
1,4-Dichlorobenzene	106-46-7	--	0.11	0.037	U	0.068	J	0.046	U	0.059	U
Dichlorodifluoromethane	75-71-8	--	--	0.056	U	0.06	U	0.069	U	0.089	U
1,1-Dichloroethane	75-34-3	--	--	0.047	U	0.05	U	0.058	U	0.074	U
1,2-Dichloroethane	107-06-2	--	--	0.056	U	0.06	U	0.069	U	0.089	U
1,1-Dichloroethene	75-35-4	--	--	0.047	U	0.05	U	0.058	U	0.074	U
1,2-Dichloropropane	78-87-5	--	--	0.047	U	0.05	U	0.058	U	0.074	U
1,3-Dichloropropene (total)	542-75-6	--	--	0.084	U	0.089	U	0.1	U	0.13	U
Ethylbenzene	100-41-4	1.4	--	0.037	U	0.04	U	0.26	J	0.56	J
2-Hexanone	591-78-6	--	--	0.094	U	0.099	U	0.12	U	0.15	U
Isopropylbenzene	98-82-8	--	--	0.037	U	0.04	U	0.21	J	0.32	J
Methyl Acetate	79-20-9	--	--	0.15	J	0.4	J	0.5	J	0.59	J
										0.21	J
										0.13	J

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Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-02-B(R)/3.5-	4.0	SED-02-C(R)/0.5-	1.0	SED-02-C(R)/2.0-	2.5	SED-03-A/6.0-6.5	SED-03-B(R)/1.5-	2.0	SED-03-B(R)/4.5-	5.0
Date Sampled:	9/27/2019		9/27/2019		9/27/2019		9/30/2019		9/30/2019		9/30/2019
Depth (ft):	3.5-4		0.5-1		2-2.5		6-6.5		1.5-2		4.5-5
LAB Sample ID:	1162112		1162104		1162105		1163618		1163621		1163622
LAB:	Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Eurofins Lancaster Eurofins Lancaster										

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
Methyl Tert Butyl Ether (MTBE)	1634-04-4	--	--	0.047	U	0.05	U	0.058	U	0.074	U
4-methyl-2-pentanone (MIBK)	108-10-1	--	--	0.094	U	0.099	U	0.12	U	0.15	U
Methylcyclohexane	108-87-2	--	--	0.3	J	0.06	U	4.6		4.9	
Methylene chloride	75-09-2	--	--	0.19	U	0.2	U	0.23	U	0.3	U
Styrene	100-42-5	--	--	0.037	U	0.04	U	0.046	U	0.059	U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.037	U	0.04	U	0.046	U	0.059	U
Tetrachloroethene	127-18-4	0.45	--	0.047	U	0.05	U	0.058	U	0.074	U
Toluene	108-88-3	2.5	--	0.056	U	0.06	U	0.069	U	0.089	U
trans-1,2-Dichloroethene	156-60-5	--	--	0.047	U	0.05	U	0.058	U	0.074	U
trans-1,3-Dichloropropene	10061-02-6	--	--	0.047	U	0.05	U	0.058	U	0.074	U
Freon 113	76-13-1	--	--	0.056	U	0.06	U	0.069	U	0.089	U
1,2,3-Trichlorobenzene	87-61-6	--	--	0.47	U	0.5	U	0.58	U	0.74	U
1,1,1-Trichloroethane	71-55-6	--	--	0.056	U	0.06	U	0.069	U	0.089	U
1,1,2-Trichloroethane	79-00-5	--	--	0.047	U	0.05	U	0.058	U	0.074	U
Trichloroethene	79-01-6	1.6	--	0.047	U	0.05	U	0.058	U	0.074	U
Trichlorofluoromethane	75-69-4	--	--	0.065	U	0.07	U	0.081	U	0.1	U
1,2,4-Trichlorobenzene	120-82-1	--	0.0048	0.47	U	0.5	U	0.58	U	0.74	U
Vinyl Chloride	75-01-4	--	--	0.056	U	0.06	U	0.069	U	0.089	U
m,p-Xylene	179601-23-1	--	--	0.094	U	0.099	U	2.9		2.2	
o-Xylene	95-47-6	--	--	0.037	U	0.04	U	2.1		1.7	
Xylenes (total)	1330-20-7	0.12	--	ND		ND		5		3.9	
Total VOC TIC	SRP170	--	--	15	J	19	J	94	J	120	J
										29	J
										25	J

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Woodbridge Creek

Sample No.:	SED-03-C(R)/1.5-	2.0	SED-03-C(R)/6.0-	6.5	SED-04-B/2.0-2.5	(A)	SED-04-B/2.0-2.5	(B)	SED-04-C(R)/1.5-	2.0	SED-04-C(R)/1.5-	2.0
Date Sampled:	9/30/2019			9/30/2019			10/1/2019			10/1/2019		
Depth (ft):	1.5-2			6-6.5			2-2.5			2-2.5		
LAB Sample ID:	1163613			1163615			1164533			1164534		
LAB:	Eurofins			Lancaster			Eurofins			Lancaster		

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M									
Acetone	67-64-1	--	--	0.74	U	0.91	U	0.55	U	0.67	U	0.18
Benzene	71-43-2	0.34	--	0.9		8.8		0.053	J	0.092	J	0.11
Bromochloromethane	74-97-5	--	--	0.074	U	0.091	U	0.055	U	0.067	U	0.002
Bromodichloromethane	75-27-4	--	--	0.05	U	0.06	U	0.037	U	0.044	U	0.001
Bromoform	75-25-2	--	--	0.62	U	0.76	U	0.46	U	0.55	U	0.015
Bromomethane	74-83-9	--	--	0.087	U	0.11	U	0.065	U	0.078	U	0.002
2-Butanone (MEK)	78-93-3	--	--	0.12	U	0.15	U	0.092	U	0.11	U	0.003
Carbon Disulfide	75-15-0	--	--	0.29	J	0.096	J	0.055	U	0.067	U	0.003
Carbon tetrachloride	56-23-5	--	--	0.062	U	0.076	U	0.046	U	0.055	U	0.002
Chlorobenzene	108-90-7	--	--	0.11	J	0.11	J	0.046	U	0.055	U	0.002
Chloroethane	75-00-3	--	--	0.12	U	0.15	U	0.092	U	0.11	U	0.003
Chloroform	67-66-3	--	--	0.074	U	0.091	U	0.055	U	0.067	U	0.002
Chloromethane	74-87-3	--	--	0.074	U	0.091	U	0.055	U	0.067	U	0.002
cis-1,2-Dichloroethene	156-59-2	--	--	0.062	U	0.076	U	0.046	U	0.055	U	0.002
cis-1,3-Dichloropropene	10061-01-5	--	--	0.05	U	0.06	U	0.037	U	0.044	U	0.001
Cyclohexane	110-82-7	--	--	7.7		2.1		0.046	U	0.094	J	0.47
1,2-Dibromo-3-chloropropane	96-12-8	--	--	0.062	U	0.076	U	0.046	U	0.055	U	0.002
Dibromochloromethane	124-48-1	--	--	0.062	U	0.076	U	0.046	U	0.055	U	0.002
1,2-Dibromoethane	106-93-4	--	--	0.05	U	0.06	U	0.037	U	0.044	U	0.001
1,2-Dichlorobenzene	95-50-1	--	0.013	0.11	J	0.076	U	0.046	U	0.055	U	0.002
1,3-Dichlorobenzene	541-73-1	--	--	0.062	U	0.076	U	0.046	U	0.055	U	0.002
1,4-Dichlorobenzene	106-46-7	--	0.11	<u>0.13</u>	J	0.06	U	0.037	U	0.044	U	0.001
Dichlorodifluoromethane	75-71-8	--	--	0.074	U	0.091	U	0.055	U	0.067	U	0.002
1,1-Dichloroethane	75-34-3	--	--	0.062	U	0.076	U	0.046	U	0.055	U	0.002
1,2-Dichloroethane	107-06-2	--	--	0.074	U	0.091	U	0.055	U	0.067	U	0.002
1,1-Dichloroethene	75-35-4	--	--	0.062	U	0.076	U	0.046	U	0.055	U	0.002
1,2-Dichloropropane	78-87-5	--	--	0.062	U	0.076	U	0.046	U	0.055	U	0.002
1,3-Dichloropropene (total)	542-75-6	--	--	0.11	U	0.14	U	0.083	U	0.1	U	0.003
Ethylbenzene	100-41-4	1.4	--	7.2		1.5		0.037	U	0.044	U	0.049
2-Hexanone	591-78-6	--	--	0.12	U	0.15	U	0.092	U	0.11	U	0.003
Isopropylbenzene	98-82-8	--	--	3.5		0.63	J	0.037	U	0.084	J	0.22
Methyl Acetate	79-20-9	--	--	0.47	J	0.7	J	0.16	J	0.29	J	0.003

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-03-C(R)/1.5-	2.0	SED-03-C(R)/6.0-	6.5	SED-04-B/2.0-2.5	(A)	SED-04-B/2.0-2.5	(B)	SED-04-C(R)/1.5-	2.0	SED-04-C(R)/1.5-	2.0
Date Sampled:	9/30/2019			10/1/2019			10/1/2019			10/1/2019		
Depth (ft):	1.5-2			6-6.5			2-2.5			2-2.5		
LAB Sample ID:	1163613			1163615			1164533			1164534		
LAB:	Eurofins			Lancaster			Eurofins			Lancaster		

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M											
Methyl Tert Butyl Ether (MTBE)	1634-04-4	--	--	0.062	U	0.076	U	0.046	U	0.055	U	0.002	U	NA
4-methyl-2-pentanone (MIBK)	108-10-1	--	--	0.12	U	0.15	U	0.092	U	0.11	U	0.003	U	NA
Methylcyclohexane	108-87-2	--	--	35		9.8		0.15	J	0.78		NA		2.8
Methylene chloride	75-09-2	--	--	0.25	U	0.3	U	0.18	U	0.22	U	0.006	U	NA
Styrene	100-42-5	--	--	0.05	U	0.06	U	0.037	U	0.044	U	0.001	U	NA
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.05	U	0.06	U	0.037	U	0.044	U	0.001	U	NA
Tetrachloroethene	127-18-4	0.45	--	0.062	U	0.076	U	0.046	U	0.055	U	0.002	U	NA
Toluene	108-88-3	2.5	--	0.28	J	0.37	J	0.055	U	0.067	U	0.027		NA
trans-1,2-Dichloroethene	156-60-5	--	--	0.062	U	0.076	U	0.046	U	0.055	U	0.002	U	NA
trans-1,3-Dichloropropene	10061-02-6	--	--	0.062	U	0.076	U	0.046	U	0.055	U	0.002	U	NA
Freon 113	76-13-1	--	--	0.074	U	0.091	U	0.055	U	0.067	U	0.002	U	NA
1,2,3-Trichlorobenzene	87-61-6	--	--	0.62	U	0.76	U	0.46	U	0.55	U	0.015	U	NA
1,1,1-Trichloroethane	71-55-6	--	--	0.074	U	0.091	U	0.055	U	0.067	U	0.002	U	NA
1,1,2-Trichloroethane	79-00-5	--	--	0.062	U	0.076	U	0.046	U	0.055	U	0.002	U	NA
Trichloroethene	79-01-6	1.6	--	0.062	U	0.076	U	0.046	U	0.055	U	0.002	U	NA
Trichlorofluoromethane	75-69-4	--	--	0.087	U	0.11	U	0.065	U	0.078	U	0.002	U	NA
1,2,4-Trichlorobenzene	120-82-1	--	0.0048	0.62	U	0.76	U	0.46	U	0.55	U	0.015	U	NA
Vinyl Chloride	75-01-4	--	--	0.074	U	0.091	U	0.055	U	0.067	U	0.002	U	NA
m,p-Xylene	179601-23-1	--	--	20		6.2		0.092	U	0.11	U	1.2		NA
o-Xylene	95-47-6	--	--	8.1		3		0.037	U	0.078	J	NA		1.5
Xylenes (total)	1330-20-7	0.12	--	28.1		9.2		ND		0.078		1.2		1.5
Total VOC TIC	SRP170	--	--	290	J	160	J	24	J	54	J	64	J	NA

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-04-C(R)/2.0-	2.5	SED-05-A/2.0-2.5	SED-05-B/2.0-2.5	SED-05-C/6.0-6.5	SED-06-A/2.0-2.5	SED-06-B(R)/4.0-	4.5
Date Sampled:	10/1/2019		10/1/2019	10/1/2019	10/1/2019	10/2/2019	10/2/2019	
Depth (ft):	2-2.5		2-2.5	2-2.5	6-6.5	2-2.5	4-4.5	
LAB Sample ID:	1164532		1164545	1164542	1164548	1165586	1165589	
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M													
Acetone	67-64-1	--	--	0.85	U	0.049		0.014	J	0.64	U	0.062		0.18		
Benzene	71-43-2	0.34	--	0.071	U	0.004	J	0.0007	U	0.054	U	0.018		0.014	J	
Bromochloromethane	74-97-5	--	--	0.085	U	0.001	U	0.0009	U	0.064	U	0.001	U	0.004	U	
Bromodichloromethane	75-27-4	--	--	0.057	U	0.0008	U	0.0006	U	0.043	U	0.0009	U	0.003	U	
Bromoform	75-25-2	--	--	0.71	U	0.011	U	0.007	U	0.54	U	0.011	U	0.034	U	
Bromomethane	74-83-9	--	--	0.099	U	0.001	U	0.001	U	0.075	U	0.002	U	0.005	U	
2-Butanone (MEK)	78-93-3	--	--	0.14	U	0.051		0.045		0.11	U	0.021	J	0.11		
Carbon Disulfide	75-15-0	--	--	0.15	J	0.024		0.005	J	0.064	U	0.002	J	0.005	J	
Carbon tetrachloride	56-23-5	--	--	0.071	U	0.001	U	0.0007	U	0.054	U	0.001	U	0.003	U	
Chlorobenzene	108-90-7	--	--	0.071	U	0.003	J	0.0007	U	0.054	U	0.001	J	0.005	J	
Chloroethane	75-00-3	--	--	0.14	U	0.002	U	0.001	U	0.11	U	0.002	U	0.007	U	
Chloroform	67-66-3	--	--	0.085	U	0.001	U	0.0009	U	0.064	U	0.001	U	0.004	U	
Chloromethane	74-87-3	--	--	0.085	U	0.001	U	0.0009	U	0.064	U	0.001	U	0.004	U	
cis-1,2-Dichloroethene	156-59-2	--	--	0.071	U	0.001	U	0.0007	U	0.054	U	0.001	U	0.003	U	
cis-1,3-Dichloropropene	10061-01-5	--	--	0.057	U	0.0008	U	0.0006	U	0.043	U	0.0009	U	0.003	U	
Cyclohexane	110-82-7	--	--	0.14	J	0.006	J	0.0007	U	0.52	J	0.055		0.15		
1,2-Dibromo-3-chloropropane	96-12-8	--	--	0.071	U	0.001	U	0.0007	U	0.054	U	0.001	U	0.003	U	
Dibromochloromethane	124-48-1	--	--	0.071	U	0.001	U	0.0007	U	0.054	U	0.001	U	0.003	U	
1,2-Dibromoethane	106-93-4	--	--	0.057	U	0.0008	U	0.0006	U	0.043	U	0.0009	U	0.003	U	
1,2-Dichlorobenzene	95-50-1	--	0.013	0.071	U	0.006	J	0.0007	U	0.054	U	0.001	U	0.004	J	
1,3-Dichlorobenzene	541-73-1	--	--	0.071	U	0.001	U	0.0007	U	0.054	U	0.001	U	0.007	J	
1,4-Dichlorobenzene	106-46-7	--	0.11	0.057	U	0.002	J	0.0006	J	0.043	U	0.0009	U	0.005	J	
Dichlorodifluoromethane	75-71-8	--	--	0.085	U	0.001	U	0.0009	U	0.064	U	0.001	U	0.004	U	
1,1-Dichloroethane	75-34-3	--	--	0.071	U	0.001	U	0.0007	U	0.054	U	0.001	U	0.003	U	
1,2-Dichloroethane	107-06-2	--	--	0.085	U	0.001	U	0.0009	U	0.064	U	0.001	U	0.004	U	
1,1-Dichloroethene	75-35-4	--	--	0.071	U	0.001	U	0.0007	U	0.054	U	0.001	U	0.003	U	
1,2-Dichloropropane	78-87-5	--	--	0.071	U	0.001	U	0.0007	U	0.054	U	0.001	U	0.003	U	
1,3-Dichloropropene (total)	542-75-6	--	--	0.13	U	0.002	U	0.001	U	0.096	U	0.002	U	0.006	U	
Ethylbenzene	100-41-4	1.4	--	0.057	U	0.018		0.0006	U	0.081	J	0.008	J	0.006	J	
2-Hexanone	591-78-6	--	--	0.14	U	0.26		0.001	U	0.11	U	0.002	U	0.007	U	
Isopropylbenzene	98-82-8	--	--	0.11	J	0.005	J	0.0006	U	0.35	J	0.027		0.073		
Methyl Acetate	79-20-9	--	--	0.33	J	0.002	U	0.001	U	0.34	J	0.002	U	0.007	U	

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

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U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-04-C(R)/2.0-	2.5	SED-05-A/2.0-2.5	SED-05-B/2.0-2.5	SED-05-C/6.0-6.5	SED-06-A/2.0-2.5	SED-06-B(R)/4.0-	4.5
Date Sampled:	10/1/2019		10/1/2019	10/1/2019	10/1/2019	10/2/2019	10/2/2019	
Depth (ft):	2-2.5		2-2.5	2-2.5	6-6.5	2-2.5	4-4.5	
LAB Sample ID:	1164532		1164545	1164542	1164548	1165586	1165589	
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M																
Methyl Tert Butyl Ether (MTBE)	1634-04-4	--	--	0.071	U	0.001	U	0.0007	U	0.054	U	0.001	U	0.003	U				
4-methyl-2-pentanone (MIBK)	108-10-1	--	--	0.14	U	0.002	U	0.001	U	0.11	U	0.002	U	0.007	U				
Methylcyclohexane	108-87-2	--	--	1.3		0.037		0.006	J	4.1				0.15				0.69	
Methylene chloride	75-09-2	--	--	0.28	U	0.004	U	0.003	U	0.21	U	0.005	U	0.014	U				
Styrene	100-42-5	--	--	0.057	U	0.0008	U	0.0006	U	0.043	U	0.0009	U	0.003	U				
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.057	U	0.0008	U	0.0006	U	0.043	U	0.0009	U	0.003	U				
Tetrachloroethene	127-18-4	0.45	--	0.071	U	0.001	U	0.0007	U	0.054	U	0.001	U	0.003	U				
Toluene	108-88-3	2.5	--	0.085	U	0.001	U	0.0009	U	0.064	U	0.004	J	0.005	J				
trans-1,2-Dichloroethene	156-60-5	--	--	0.071	U	0.001	U	0.0007	U	0.054	U	0.001	U	0.003	U				
trans-1,3-Dichloropropene	10061-02-6	--	--	0.071	U	0.001	U	0.0007	U	0.054	U	0.001	U	0.003	U				
Freon 113	76-13-1	--	--	0.085	U	0.001	U	0.0009	U	0.064	U	0.001	U	0.004	U				
1,2,3-Trichlorobenzene	87-61-6	--	--	0.71	U	0.011	U	0.007	U	0.54	U	0.011	U	0.034	U				
1,1,1-Trichloroethane	71-55-6	--	--	0.085	U	0.001	U	0.0009	U	0.064	U	0.001	U	0.004	U				
1,1,2-Trichloroethane	79-00-5	--	--	0.071	U	0.001	U	0.0007	U	0.054	U	0.001	U	0.003	U				
Trichloroethene	79-01-6	1.6	--	0.071	U	0.001	U	0.0007	U	0.054	U	0.001	U	0.003	U				
Trichlorofluoromethane	75-69-4	--	--	0.099	U	0.001	U	0.001	U	0.075	U	0.002	U	0.005	U				
1,2,4-Trichlorobenzene	120-82-1	--	0.0048	0.71	U	0.011	U	0.007	U	0.54	U	0.011	U	0.034	U				
Vinyl Chloride	75-01-4	--	--	0.085	U	0.001	U	0.0009	U	0.064	U	0.001	U	0.004	U				
m,p-Xylene	179601-23-1	--	--	0.21	J	0.011		0.001	U	3.3		0.12		0.014	J				
o-Xylene	95-47-6	--	--	0.73		0.003	J	0.0008	J	2.2		0.075		0.067					
Xylenes (total)	1330-20-7	0.12	--	0.94		0.014		0.0008		5.5		0.195		0.081					
Total VOC TIC	SRP170	--	--	78	J	6.9	J	4.8	J	170	J	15	J	50	J				

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Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-06-C/4.0-4.5	SED-06-C/4.0-4.5	SED-09-A(R)/3.0-	SED-09-B/5.0-5.5	SED-09-C(R)/4.5-	SED-19-B/0.5-1.0
(A)			3.5		5.0	
Date Sampled:	10/2/2019	10/2/2019	10/7/2019	10/7/2019	10/16/2019	9/20/2019
Depth (ft):	4-4.5	4-4.5	3-3.5	5-5.5	4.5-5	0.5-1
LAB Sample ID:	1165582	1165583	1169339	1169336	1176387	1156544
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M																
Acetone	67-64-1	--	--	0.61	U	0.82	U	0.79	U	0.53	U	0.86	U	0.13					
Benzene	71-43-2	0.34	--	0.4	J	0.33	J	0.066	U	0.044	U	0.54	J	0.002	U				
Bromochloromethane	74-97-5	--	--	0.061	U	0.082	U	0.079	U	0.053	U	0.086	U	0.002	U				
Bromodichloromethane	75-27-4	--	--	0.041	U	0.055	U	0.053	U	0.035	U	0.058	U	0.002	U				
Bromoform	75-25-2	--	--	0.51	U	0.68	U	0.66	U	0.44	U	0.72	U	0.019	U				
Bromomethane	74-83-9	--	--	0.072	U	0.096	U	0.092	U	0.061	U	0.1	U	0.003	U				
2-Butanone (MEK)	78-93-3	--	--	0.1	U	0.14	U	0.13	U	0.088	U	0.14	U	0.045					
Carbon Disulfide	75-15-0	--	--	0.061	U	0.16	J	0.079	U	0.053	U	0.086	U	0.039					
Carbon tetrachloride	56-23-5	--	--	0.051	U	0.068	U	0.066	U	0.044	U	0.072	U	0.002	U				
Chlorobenzene	108-90-7	--	--	0.19	J	0.23	J	0.066	U	0.044	U	0.072	U	0.004	J				
Chloroethane	75-00-3	--	--	0.1	U	0.14	U	0.13	U	0.088	U	0.14	U	0.004	U				
Chloroform	67-66-3	--	--	0.061	U	0.082	U	0.079	U	0.053	U	0.086	U	0.002	U				
Chloromethane	74-87-3	--	--	0.061	U	0.082	U	0.079	U	0.053	U	0.086	U	0.002	U				
cis-1,2-Dichloroethene	156-59-2	--	--	0.051	U	0.068	U	0.066	U	0.044	U	0.072	U	0.002	U				
cis-1,3-Dichloropropene	10061-01-5	--	--	0.041	U	0.055	U	0.053	U	0.035	U	0.058	U	0.002	U				
Cyclohexane	110-82-7	--	--	0.83		1.8		0.6	J	0.26	J	1.1		0.004	J				
1,2-Dibromo-3-chloropropane	96-12-8	--	--	0.051	U	0.068	U	0.066	U	0.044	U	0.072	U	0.002	U				
Dibromochloromethane	124-48-1	--	--	0.051	U	0.25	J	0.066	U	0.044	U	0.072	U	0.002	U				
1,2-Dibromoethane	106-93-4	--	--	0.041	U	0.055	U	0.053	U	0.035	U	0.058	U	0.002	U				
1,2-Dichlorobenzene	95-50-1	--	0.013	0.083	J	0.14	J	0.066	U	0.044	U	0.29	J	0.002	U				
1,3-Dichlorobenzene	541-73-1	--	--	0.051	U	0.09	J	0.066	U	0.044	U	0.072	U	0.002	U				
1,4-Dichlorobenzene	106-46-7	--	0.11	0.26	J	0.36	J	0.053	U	0.06	J	0.058	U	0.002	U				
Dichlorodifluoromethane	75-71-8	--	--	0.061	U	0.082	U	0.079	U	0.053	U	0.086	U	0.002	U				
1,1-Dichloroethane	75-34-3	--	--	0.051	U	0.068	U	0.066	U	0.044	U	0.072	U	0.002	U				
1,2-Dichloroethane	107-06-2	--	--	0.061	U	0.082	U	0.079	U	0.053	U	0.086	U	0.002	U				
1,1-Dichloroethene	75-35-4	--	--	0.051	U	0.068	U	0.066	U	0.044	U	0.072	U	0.002	U				
1,2-Dichloropropane	78-87-5	--	--	0.051	U	0.068	U	0.066	U	0.044	U	0.072	U	0.002	U				
1,3-Dichloropropene (total)	542-75-6	--	--	0.092	U	0.12	U	0.12	U	0.079	U	0.13	U	0.003	U				
Ethylbenzene	100-41-4	1.4	--	0.3	J	0.21	J	0.053	U	0.035	U	5.9		0.002	U				
2-Hexanone	591-78-6	--	--	0.1	U	0.14	U	0.13	U	0.088	U	0.14	U	0.004	U				
Isopropylbenzene	98-82-8	--	--	1.1		1.7		0.37	J	0.14	J	1.2		0.002	U				
Methyl Acetate	79-20-9	--	--	0.53		1		0.21	J	0.23	J	0.4	J	0.004	U				

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-06-C/4.0-4.5	SED-06-C/4.0-4.5	SED-09-A(R)/3.0-	SED-09-B/5.0-5.5	SED-09-C(R)/4.5-	SED-19-B/0.5-1.0
(A)		(B)	3.5		5.0	
Date Sampled:	10/2/2019	10/2/2019	10/7/2019	10/7/2019	10/16/2019	9/20/2019
Depth (ft):	4-4.5	4-4.5	3-3.5	5-5.5	4.5-5	0.5-1
LAB Sample ID:	1165582	1165583	1169339	1169336	1176387	1156544
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster
	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M																	
Methyl Tert Butyl Ether (MTBE)	1634-04-4	--	--	0.051	U	0.068	U	0.066	U	0.044	U	0.072	U	0.002	U					
4-methyl-2-pentanone (MIBK)	108-10-1	--	--	0.1	U	0.14	U	0.13	U	0.088	U	0.14	U	0.004	U					
Methylcyclohexane	108-87-2	--	--	6.5		13		9.2		2.3		5.4		0.006	J					
Methylene chloride	75-09-2	--	--	0.2	U	0.27	U	0.26	U	0.18	U	0.29	U	0.008	U					
Styrene	100-42-5	--	--	0.041	U	0.055	U	0.053	U	0.035	U	0.058	U	0.002	U					
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.041	U	0.055	U	0.053	U	0.035	U	0.058	U	0.002	U					
Tetrachloroethene	127-18-4	0.45	--	0.051	U	0.068	U	0.066	U	0.044	U	0.072	U	0.002	U					
Toluene	108-88-3	2.5	--	0.17	J	0.082	U	0.079	U	0.053	U	4.4		0.004	J					
trans-1,2-Dichloroethene	156-60-5	--	--	0.051	U	0.068	U	0.066	U	0.044	U	0.072	U	0.002	U					
trans-1,3-Dichloropropene	10061-02-6	--	--	0.051	U	0.068	U	0.066	U	0.044	U	0.072	U	0.002	U					
Freon 113	76-13-1	--	--	0.061	U	0.082	U	0.079	U	0.053	U	0.086	U	0.002	U					
1,2,3-Trichlorobenzene	87-61-6	--	--	0.51	U	0.68	U	0.66	U	0.44	U	0.72	U	0.019	U					
1,1,1-Trichloroethane	71-55-6	--	--	0.061	U	0.082	U	0.079	U	0.053	U	0.086	U	0.002	U					
1,1,2-Trichloroethane	79-00-5	--	--	0.051	U	0.068	U	0.066	U	0.044	U	0.072	U	0.002	U					
Trichloroethene	79-01-6	1.6	--	0.051	U	0.068	U	0.066	U	0.044	U	0.072	U	0.002	U					
Trichlorofluoromethane	75-69-4	--	--	0.072	U	0.096	U	0.092	U	0.061	U	0.1	U	0.003	U					
1,2,4-Trichlorobenzene	120-82-1	--	0.0048	0.51	U	0.68	U	0.66	U	0.44	U	0.72	U	0.019	U					
Vinyl Chloride	75-01-4	--	--	0.061	U	0.082	U	0.079	U	0.053	U	0.086	U	0.002	U					
m,p-Xylene	179601-23-1	--	--	0.77		0.24	J	0.13	U	0.18	J	19		0.004	U					
o-Xylene	95-47-6	--	--	0.46	J	0.57	J	0.22	J	0.14	J	10		0.004	J					
Xylenes (total)	1330-20-7	0.12	--	1.23		0.81		0.22		0.32		29		0.004						
Total VOC TIC	SRP170	--	--	140	J	210	J	180	J	49	J	260	J	4.6	J					

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

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ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-19-C/0.5-1.0	SED-22-A/0.5-1.0	SED-22-A/2.0-2.5	SED-22-B/0.5-1.0	SED-22-B/9.0-9.5	SED-22-C/0.5-1.0
Date Sampled:	9/20/2019	9/25/2019	9/25/2019	9/25/2019	9/25/2019	9/26/2019
Depth (ft):	0.5-1	0.5-1	2-2.5	0.5-1	9-9.5	0.5-1
LAB Sample ID:	1156541	1159738	1159739	1159741	1159742	1160982

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Eurofins Eurofins Eurofins Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M												
Acetone	67-64-1	--	--	0.18	0.025	J	0.021	J	0.76	U	0.9	U	1	U	
Benzene	71-43-2	0.34	--	0.002	U	0.001	U	0.001	U	0.063	U	0.094	J	0.1	J
Bromochloromethane	74-97-5	--	--	0.002	U	0.002	U	0.002	U	0.076	U	0.09	U	0.1	U
Bromodichloromethane	75-27-4	--	--	0.002	U	0.001	U	0.001	U	0.051	U	0.06	U	0.07	U
Bromoform	75-25-2	--	--	0.02	U	0.014	U	0.014	U	0.63	U	0.75	U	0.87	U
Bromomethane	74-83-9	--	--	0.003	U	0.002	U	0.002	U	0.089	U	0.1	U	0.12	U
2-Butanone (MEK)	78-93-3	--	--	0.11	--	0.003	U	0.004	J	0.13	U	0.15	U	0.17	U
Carbon Disulfide	75-15-0	--	--	0.062	--	0.007	J	0.006	J	0.076	U	0.09	U	0.16	J
Carbon tetrachloride	56-23-5	--	--	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
Chlorobenzene	108-90-7	--	--	0.01	J	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
Chloroethane	75-00-3	--	--	0.004	U	0.003	U	0.003	U	0.13	U	0.15	U	0.17	U
Chloroform	67-66-3	--	--	0.002	U	0.002	U	0.002	U	0.076	U	0.09	U	0.1	U
Chloromethane	74-87-3	--	--	0.002	U	0.002	U	0.002	U	0.076	U	0.09	U	0.1	U
cis-1,2-Dichloroethene	156-59-2	--	--	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
cis-1,3-Dichloropropene	10061-01-5	--	--	0.002	U	0.001	U	0.001	U	0.051	U	0.06	U	0.07	U
Cyclohexane	110-82-7	--	--	0.006	J	0.001	U	0.001	U	0.11	J	0.79	--	0.37	J
1,2-Dibromo-3-chloropropane	96-12-8	--	--	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
Dibromochloromethane	124-48-1	--	--	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
1,2-Dibromoethane	106-93-4	--	--	0.002	U	0.001	U	0.001	U	0.051	U	0.06	U	0.07	U
1,2-Dichlorobenzene	95-50-1	--	0.013	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
1,3-Dichlorobenzene	541-73-1	--	--	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
1,4-Dichlorobenzene	106-46-7	--	0.11	0.006	J	0.001	U	0.001	U	0.11	J	0.06	U	0.37	J
Dichlorodifluoromethane	75-71-8	--	--	0.002	U	0.002	U	0.002	U	0.076	U	0.09	U	0.1	U
1,1-Dichloroethane	75-34-3	--	--	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
1,2-Dichloroethane	107-06-2	--	--	0.002	U	0.002	U	0.002	U	0.076	U	0.09	U	0.1	U
1,1-Dichloroethene	75-35-4	--	--	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
1,2-Dichloropropane	78-87-5	--	--	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
1,3-Dichloropropene (total)	542-75-6	--	--	0.004	U	0.003	U	0.003	U	0.11	U	0.13	U	0.16	U
Ethylbenzene	100-41-4	1.4	--	0.002	U	0.001	U	0.001	U	0.051	U	0.25	J	0.076	J
2-Hexanone	591-78-6	--	--	0.004	U	0.003	U	0.003	U	0.13	U	0.15	U	0.17	U
Isopropylbenzene	98-82-8	--	--	0.002	U	0.001	U	0.001	U	0.063	J	0.06	U	0.11	J
Methyl Acetate	79-20-9	--	--	0.004	U	0.003	U	0.003	U	0.25	J	0.3	J	0.27	J
Methyl Tert Butyl Ether (MTBE)	1634-04-4	--	--	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U

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Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-19-C/0.5-1.0	SED-22-A/0.5-1.0	SED-22-A/2.0-2.5	SED-22-B/0.5-1.0	SED-22-B/9.0-9.5	SED-22-C/0.5-1.0
Date Sampled:	9/20/2019	9/25/2019	9/25/2019	9/25/2019	9/25/2019	9/26/2019
Depth (ft):	0.5-1	0.5-1	2-2.5	0.5-1	9-9.5	0.5-1
LAB Sample ID:	1156541	1159738	1159739	1159741	1159742	1160982

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Eurofins Eurofins Eurofins Eurofins Eurofins Eurofins Eurofins Eurofins Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M												
4-methyl-2-pentanone (MIBK)	108-10-1	--	--	0.004	U	0.003	U	0.003	U	0.13	U	0.15	U	0.17	U
Methylcyclohexane	108-87-2	--	--	0.023		0.002	U	0.002	U	0.94		8.1		1.4	
Methylene chloride	75-09-2	--	--	0.008	U	0.006	U	0.006	U	0.25	U	0.3	U	0.35	U
Styrene	100-42-5	--	--	0.002	U	0.001	U	0.001	U	0.051	U	0.06	U	0.07	U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.002	U	0.001	U	0.001	U	0.051	U	0.06	U	0.07	U
Tetrachloroethene	127-18-4	0.45	--	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
Toluene	108-88-3	2.5	--	0.002	U	0.002	U	0.002	U	0.076	U	0.1	J	0.1	U
trans-1,2-Dichloroethene	156-60-5	--	--	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
trans-1,3-Dichloropropene	10061-02-6	--	--	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
Freon 113	76-13-1	--	--	0.002	U	0.002	U	0.002	U	0.076	U	0.09	U	0.1	U
1,2,3-Trichlorobenzene	87-61-6	--	--	0.02	U	0.014	U	0.014	U	0.63	U	0.75	U	0.87	U
1,1,1-Trichloroethane	71-55-6	--	--	0.002	U	0.002	U	0.002	U	0.076	U	0.09	U	0.1	U
1,1,2-Trichloroethane	79-00-5	--	--	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
Trichloroethene	79-01-6	1.6	--	0.002	U	0.001	U	0.001	U	0.063	U	0.075	U	0.087	U
Trichlorofluoromethane	75-69-4	--	--	0.003	U	0.002	U	0.002	U	0.089	U	0.1	U	0.12	U
1,2,4-Trichlorobenzene	120-82-1	--	0.0048	0.02	U	0.014	U	0.014	U	0.63	U	0.75	U	0.87	U
Vinyl Chloride	75-01-4	--	--	0.002	U	0.002	U	0.002	U	0.076	U	0.09	U	0.1	U
m,p-Xylene	179601-23-1	--	--	0.004	U	0.003	U	0.003	U	0.13	J	0.78		0.58	J
o-Xylene	95-47-6	--	--	0.005	J	0.001	U	0.001	U	0.16	J	0.7	J	0.13	J
Xylenes (total)	1330-20-7	0.12	--	0.005		ND		ND		0.29		1.48		0.71	
Total VOC TIC	SRP170	--	--	7.4	J	ND	U	ND	U	29	J	120	J	50	J

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Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-22-C/4.5-5.0	SED-23-A/0.5-1.0	SED-23-A/2.0-2.5	SED-23-B/0.5-1.0	SED-23-B/6.5-7.0	SED-23-C/0.5-1.0
Date Sampled:	9/26/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019
Depth (ft):	4.5-5	0.5-1	2-2.5	0.5-1	6.5-7	0.5-1
LAB Sample ID:	1160983	1165597	1165598	1165591	1165592	1165594

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M											
Acetone	67-64-1	--	--	0.86	U	0.71	U	0.94	U	0.62	U	0.9	U	0.011 J
Benzene	71-43-2	0.34	--	0.16	J	0.059	U	0.078	U	0.051	U	0.087	J	0.0007 U
Bromochloromethane	74-97-5	--	--	0.086	U	0.071	U	0.094	U	0.062	U	0.09	U	0.0009 U
Bromodichloromethane	75-27-4	--	--	0.057	U	0.047	U	0.063	U	0.041	U	0.06	U	0.0006 U
Bromoform	75-25-2	--	--	0.72	U	0.59	U	0.78	U	0.51	U	0.75	U	0.007 U
Bromomethane	74-83-9	--	--	0.1	U	0.082	U	0.11	U	0.072	U	0.11	U	0.001 U
2-Butanone (MEK)	78-93-3	--	--	0.14	U	0.12	U	0.16	U	0.1	U	0.15	U	0.001 U
Carbon Disulfide	75-15-0	--	--	0.086	U	0.19	J	0.094	U	0.78		0.12	J	0.005 J
Carbon tetrachloride	56-23-5	--	--	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U	0.0007 U
Chlorobenzene	108-90-7	--	--	0.072	U	0.059	U	0.094	J	0.051	U	0.2	J	0.0007 U
Chloroethane	75-00-3	--	--	0.14	U	0.12	U	0.16	U	0.1	U	0.15	U	0.001 U
Chloroform	67-66-3	--	--	0.086	U	0.071	U	0.094	U	0.062	U	0.09	U	0.0009 U
Chloromethane	74-87-3	--	--	0.086	U	0.071	U	0.094	U	0.062	U	0.09	U	0.0009 U
cis-1,2-Dichloroethene	156-59-2	--	--	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U	0.0007 U
cis-1,3-Dichloropropene	10061-01-5	--	--	0.057	U	0.047	U	0.063	U	0.041	U	0.06	U	0.0006 U
Cyclohexane	110-82-7	--	--	1.1		0.096	J	0.75	J	0.051	U	0.26	J	0.0007 U
1,2-Dibromo-3-chloropropane	96-12-8	--	--	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U	0.0007 U
Dibromochloromethane	124-48-1	--	--	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U	0.0007 U
1,2-Dibromoethane	106-93-4	--	--	0.057	U	0.047	U	0.063	U	0.041	U	0.06	U	0.0006 U
1,2-Dichlorobenzene	95-50-1	--	0.013	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U	0.0007 U
1,3-Dichlorobenzene	541-73-1	--	--	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U	0.0007 U
1,4-Dichlorobenzene	106-46-7	--	0.11	0.057	U	0.071	J	0.082	J	0.041	U	0.08	J	0.0006 U
Dichlorodifluoromethane	75-71-8	--	--	0.086	U	0.071	U	0.094	U	0.062	U	0.09	U	0.0009 U
1,1-Dichloroethane	75-34-3	--	--	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U	0.0007 U
1,2-Dichloroethane	107-06-2	--	--	0.086	U	0.071	U	0.094	U	0.062	U	0.09	U	0.0009 U
1,1-Dichloroethene	75-35-4	--	--	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U	0.0007 U
1,2-Dichloropropane	78-87-5	--	--	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U	0.0007 U
1,3-Dichloropropene (total)	542-75-6	--	--	0.13	U	0.11	U	0.14	U	0.092	U	0.14	U	0.001 U
Ethylbenzene	100-41-4	1.4	--	0.49	J	0.047	U	0.063	U	0.13	J	0.06	U	0.0006 U
2-Hexanone	591-78-6	--	--	0.14	U	0.12	U	0.16	U	0.1	U	0.15	U	0.001 U
Isopropylbenzene	98-82-8	--	--	0.32	J	0.53	J	0.47	J	0.11	J	0.13	J	0.0006 U
Methyl Acetate	79-20-9	--	--	0.24	J	0.35	J	0.37	J	0.18	J	0.51	J	0.001 U
Methyl Tert Butyl Ether (MTBE)	1634-04-4	--	--	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U	0.0007 U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-22-C/4.5-5.0	SED-23-A/0.5-1.0	SED-23-A/2.0-2.5	SED-23-B/0.5-1.0	SED-23-B/6.5-7.0	SED-23-C/0.5-1.0
Date Sampled:	9/26/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019
Depth (ft):	4.5-5	0.5-1	2-2.5	0.5-1	6.5-7	0.5-1
LAB Sample ID:	1160983	1165597	1165598	1165591	1165592	1165594

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M										
4-methyl-2-pentanone (MIBK)	108-10-1	--	--	0.14	U	0.12	U	0.16	U	0.1	U	0.15	U
Methylcyclohexane	108-87-2	--	--	8.9		2.1		11		0.29	J	3.4	
Methylene chloride	75-09-2	--	--	0.29	U	0.24	U	0.31	U	0.21	U	0.3	U
Styrene	100-42-5	--	--	0.057	U	0.047	U	0.063	U	0.041	U	0.06	U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.057	U	0.047	U	0.063	U	0.041	U	0.06	U
Tetrachloroethene	127-18-4	0.45	--	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U
Toluene	108-88-3	2.5	--	0.086	U	0.071	U	0.094	U	0.062	U	0.09	U
trans-1,2-Dichloroethene	156-60-5	--	--	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U
trans-1,3-Dichloropropene	10061-02-6	--	--	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U
Freon 113	76-13-1	--	--	0.086	U	0.071	U	0.094	U	0.062	U	0.09	U
1,2,3-Trichlorobenzene	87-61-6	--	--	0.72	U	0.59	U	0.78	U	0.51	U	0.75	U
1,1,1-Trichloroethane	71-55-6	--	--	0.086	U	0.071	U	0.094	U	0.062	U	0.09	U
1,1,2-Trichloroethane	79-00-5	--	--	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U
Trichloroethene	79-01-6	1.6	--	0.072	U	0.059	U	0.078	U	0.051	U	0.075	U
Trichlorofluoromethane	75-69-4	--	--	0.1	U	0.082	U	0.11	U	0.072	U	0.11	U
1,2,4-Trichlorobenzene	120-82-1	--	0.0048	0.72	U	0.59	U	0.78	U	0.51	U	0.75	U
Vinyl Chloride	75-01-4	--	--	0.086	U	0.071	U	0.094	U	0.062	U	0.09	U
m,p-Xylene	179601-23-1	--	--	1.6		0.12	U	0.16	U	0.1	U	0.19	J
o-Xylene	95-47-6	--	--	1.2		0.17	J	0.19	J	0.041	U	0.26	J
Xylenes (total)	1330-20-7	0.12	--	2.8		0.17		0.19		ND		0.45	
Total VOC TIC	SRP170	--	--	99	J	110	J	140	J	46	J	85	J
													1.9

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

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NA = Not Analyzed

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MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-23-C/5.5-6.0	SED-24-A/0.5-1.0	SED-24-A/5.5-6.0	SED-24-A/5.5-6.0	SED-24-B/0.5-1.0	SED-24-B/2.0-2.5
(A)			(B)			
Date Sampled:	10/2/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019
Depth (ft):	5.5-6	0.5-1	5.5-6	5.5-6	0.5-1	2-2.5
LAB Sample ID:	1165595	1167969	1167970	1167971	1167973	1167974
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M												
Acetone	67-64-1	--	--	0.7	U	0.009	U	0.79	U	0.78	U	0.018	J	0.012	J
Benzene	71-43-2	0.34	--	0.19	J	0.0008	U	1.5		2.1		0.0007	U	0.0006	U
Bromochloromethane	74-97-5	--	--	0.07	U	0.0009	U	0.079	U	0.078	U	0.0009	U	0.0007	U
Bromodichloromethane	75-27-4	--	--	0.047	U	0.0006	U	0.053	U	0.052	U	0.0006	U	0.0005	U
Bromoform	75-25-2	--	--	0.58	U	0.008	U	0.66	U	0.65	U	0.007	U	0.006	U
Bromomethane	74-83-9	--	--	0.082	U	0.001	U	0.093	U	0.091	U	0.001	U	0.0009	U
2-Butanone (MEK)	78-93-3	--	--	0.12	U	0.002	U	0.13	U	0.13	U	0.003	J	0.003	J
Carbon Disulfide	75-15-0	--	--	0.22	J	0.003	J	0.24	J	0.31	J	0.0009	J	0.001	J
Carbon tetrachloride	56-23-5	--	--	0.058	U	0.0008	U	0.066	U	0.065	U	0.0007	U	0.0006	U
Chlorobenzene	108-90-7	--	--	0.058	U	0.0008	U	0.066	U	0.073	J	0.0007	U	0.0006	U
Chloroethane	75-00-3	--	--	0.12	U	0.002	U	0.13	U	0.13	U	0.001	U	0.001	U
Chloroform	67-66-3	--	--	0.07	U	0.0009	U	0.079	U	0.078	U	0.0009	U	0.0007	U
Chloromethane	74-87-3	--	--	0.07	U	0.0009	U	0.079	U	0.078	U	0.0009	U	0.0007	U
cis-1,2-Dichloroethene	156-59-2	--	--	0.058	U	0.0008	U	0.066	U	0.065	U	0.0007	U	0.0006	U
cis-1,3-Dichloropropene	10061-01-5	--	--	0.047	U	0.0006	U	0.053	U	0.052	U	0.0006	U	0.0005	U
Cyclohexane	110-82-7	--	--	1.3		0.0008	U	2.5		3.5		0.0007	U	0.0006	U
1,2-Dibromo-3-chloropropane	96-12-8	--	--	0.058	U	0.0008	U	0.066	U	0.065	U	0.0007	U	0.0006	U
Dibromochloromethane	124-48-1	--	--	0.058	U	0.0008	U	0.066	U	0.065	U	0.0007	U	0.0006	U
1,2-Dibromoethane	106-93-4	--	--	0.047	U	0.0006	U	0.053	U	0.052	U	0.0006	U	0.0005	U
1,2-Dichlorobenzene	95-50-1	--	0.013	0.058	U	0.0008	U	0.1	J	0.14	J	0.0007	U	0.0006	U
1,3-Dichlorobenzene	541-73-1	--	--	0.058	U	0.0008	U	0.066	U	0.065	U	0.0007	U	0.0006	U
1,4-Dichlorobenzene	106-46-7	--	0.11	0.047	U	0.0006	U	0.098	J	0.1	J	0.0006	U	0.0005	U
Dichlorodifluoromethane	75-71-8	--	--	0.07	U	0.0009	U	0.079	U	0.078	U	0.0009	U	0.0007	U
1,1-Dichloroethane	75-34-3	--	--	0.058	U	0.0008	U	0.066	U	0.065	U	0.0007	U	0.0006	U
1,2-Dichloroethane	107-06-2	--	--	0.07	U	0.0009	U	0.079	U	0.078	U	0.0009	U	0.0007	U
1,1-Dichloroethene	75-35-4	--	--	0.058	U	0.0008	U	0.066	U	0.065	U	0.0007	U	0.0006	U
1,2-Dichloropropane	78-87-5	--	--	0.058	U	0.0008	U	0.066	U	0.065	U	0.0007	U	0.0006	U
1,3-Dichloropropene (total)	542-75-6	--	--	0.11	U	0.001	U	0.12	U	0.12	U	0.001	U	0.001	U
Ethylbenzene	100-41-4	1.4	--	0.31	J	0.0006	U	8.9		10		0.0006	U	0.0005	U
2-Hexanone	591-78-6	--	--	0.12	U	0.002	U	0.13	U	0.13	U	0.001	U	0.001	U
Isopropylbenzene	98-82-8	--	--	0.39	J	0.0006	U	1.7		2.1		0.0006	U	0.0005	U
Methyl Acetate	79-20-9	--	--	0.34	J	0.002	U	0.76		1.1		0.001	U	0.001	U

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Values in italics indicate MDL above applicable criterion.

Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-23-C/5.5-6.0	SED-24-A/0.5-1.0	SED-24-A/5.5-6.0	SED-24-A/5.5-6.0	SED-24-B/0.5-1.0	SED-24-B/2.0-2.5
(A)			(B)			
Date Sampled:	10/2/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019
Depth (ft):	5.5-6	0.5-1	5.5-6	5.5-6	0.5-1	2-2.5
LAB Sample ID:	1165595	1167969	1167970	1167971	1167973	1167974
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M														
Methyl Tert Butyl Ether (MTBE)	1634-04-4	--	--	0.058	U	0.0008	U	0.066	U	0.065	U	0.0007	U	0.0006	U	0.0006	U
4-methyl-2-pentanone (MIBK)	108-10-1	--	--	0.12	U	0.002	U	0.13	U	0.13	U	0.001	U	0.001	U		
Methylcyclohexane	108-87-2	--	--	13		0.0009	U	17		29		0.0009	U	0.0007	U		
Methylene chloride	75-09-2	--	--	0.23	U	0.003	U	0.26	U	0.26	U	0.003	U	0.002	U		
Styrene	100-42-5	--	--	0.047	U	0.0006	U	0.053	U	0.052	U	0.0006	U	0.0005	U		
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.047	U	0.0006	U	0.053	U	0.052	U	0.0006	U	0.0005	U		
Tetrachloroethene	127-18-4	0.45	--	0.058	U	0.0008	U	0.066	U	0.065	U	0.0007	U	0.0006	U		
Toluene	108-88-3	2.5	--	0.07	U	0.001	J	5.8		12		0.0009	U	0.0007	U		
trans-1,2-Dichloroethene	156-60-5	--	--	0.058	U	0.0008	U	0.066	U	0.065	U	0.0007	U	0.0006	U		
trans-1,3-Dichloropropene	10061-02-6	--	--	0.058	U	0.0008	U	0.066	U	0.065	U	0.0007	U	0.0006	U		
Freon 113	76-13-1	--	--	0.07	U	0.0009	U	0.079	U	0.078	U	0.0009	U	0.0007	U		
1,2,3-Trichlorobenzene	87-61-6	--	--	0.58	U	0.008	U	0.66	U	0.65	U	0.007	U	0.006	U		
1,1,1-Trichloroethane	71-55-6	--	--	0.07	U	0.0009	U	0.079	U	0.078	U	0.0009	U	0.0007	U		
1,1,2-Trichloroethane	79-00-5	--	--	0.058	U	0.0008	U	0.066	U	0.065	U	0.0007	U	0.0006	U		
Trichloroethene	79-01-6	1.6	--	0.058	U	0.0008	U	0.066	U	0.065	U	0.0007	U	0.0006	U		
Trichlorofluoromethane	75-69-4	--	--	0.082	U	0.001	U	0.093	U	0.091	U	0.001	U	0.0009	U		
1,2,4-Trichlorobenzene	120-82-1	--	0.0048	0.58	U	0.008	U	0.66	U	0.65	U	0.007	U	0.006	U		
Vinyl Chloride	75-01-4	--	--	0.07	U	0.0009	U	0.079	U	0.078	U	0.0009	U	0.0007	U		
m,p-Xylene	179601-23-1	--	--	0.12	J	0.002	U	36		37		0.001	U	0.001	U		
o-Xylene	95-47-6	--	--	0.55	J	0.0006	U	17		19		0.0006	U	0.0005	U		
Xylenes (total)	1330-20-7	0.12	--	0.67		ND		53		56		ND		ND			
Total VOC TIC	SRP170	--	--	130	J	NA		NA		NA		NA		NA			

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ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

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NA = Not Analyzed

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U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-24-C/0.5-1.0	SED-24-C/2.0-2.5	SED-25-A/0.5-1.0	SED-25-B/0.5-1.0	SED-25-C/0.5-1.0
Date Sampled:	10/4/2019	10/4/2019	10/25/2019	10/24/2019	10/24/2019
Depth (ft):	0.5-1	2-2.5	0.5-1	0.5-1	0.5-1
LAB Sample ID:	1167976	1167977	1184596	1183320	1183318

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M										
Acetone	67-64-1	--	--	0.71	U	0.58	U	0.031	J	0.008	U	0.03	J
Benzene	71-43-2	0.34	--	0.059	U	0.048	U	0.001	U	0.0007	U	0.001	U
Bromochloromethane	74-97-5	--	--	0.071	U	0.058	U	0.001	U	0.0008	U	0.001	U
Bromodichloromethane	75-27-4	--	--	0.047	U	0.039	U	0.0009	U	0.0005	U	0.0008	U
Bromoform	75-25-2	--	--	0.59	U	0.48	U	0.011	U	0.007	U	0.011	U
Bromomethane	74-83-9	--	--	0.083	U	0.068	U	0.002	U	0.001	U	0.001	U
2-Butanone (MEK)	78-93-3	--	--	0.12	U	0.097	U	0.005	J	0.001	U	0.005	J
Carbon Disulfide	75-15-0	--	--	0.1	J	0.068	J	0.002	J	0.0008	U	0.002	J
Carbon tetrachloride	56-23-5	--	--	0.059	U	0.048	U	0.001	U	0.0007	U	0.001	U
Chlorobenzene	108-90-7	--	--	0.059	U	0.048	U	0.001	U	0.0007	U	0.001	U
Chloroethane	75-00-3	--	--	0.12	U	0.097	U	0.002	U	0.001	U	0.002	U
Chloroform	67-66-3	--	--	0.071	U	0.058	U	0.001	U	0.0008	U	0.001	U
Chloromethane	74-87-3	--	--	0.071	U	0.058	U	0.001	U	0.0008	U	0.001	U
cis-1,2-Dichloroethene	156-59-2	--	--	0.059	U	0.048	U	0.001	U	0.0007	U	0.001	U
cis-1,3-Dichloropropene	10061-01-5	--	--	0.047	U	0.039	U	0.0009	U	0.0005	U	0.0008	U
Cyclohexane	110-82-7	--	--	0.69	--	0.64	--	0.001	U	0.0007	U	0.001	U
1,2-Dibromo-3-chloropropane	96-12-8	--	--	0.059	U	0.048	U	0.001	U	0.0007	U	0.001	U
Dibromochloromethane	124-48-1	--	--	0.059	U	0.048	U	0.001	U	0.0007	U	0.001	U
1,2-Dibromoethane	106-93-4	--	--	0.047	U	0.039	U	0.0009	U	0.0005	U	0.0008	U
1,2-Dichlorobenzene	95-50-1	--	0.013	0.059	U	0.048	U	0.001	U	0.0007	U	0.001	U
1,3-Dichlorobenzene	541-73-1	--	--	0.059	U	0.048	U	0.001	U	0.0007	U	0.001	U
1,4-Dichlorobenzene	106-46-7	--	0.11	0.047	U	0.039	U	0.0009	U	0.0005	U	0.0008	U
Dichlorodifluoromethane	75-71-8	--	--	0.071	U	0.058	U	0.001	U	0.0008	U	0.001	U
1,1-Dichloroethane	75-34-3	--	--	0.059	U	0.048	U	0.001	U	0.0007	U	0.001	U
1,2-Dichloroethane	107-06-2	--	--	0.071	U	0.058	U	0.001	U	0.0008	U	0.001	U
1,1-Dichloroethene	75-35-4	--	--	0.059	U	0.048	U	0.001	U	0.0007	U	0.001	U
1,2-Dichloropropane	78-87-5	--	--	0.059	U	0.048	U	0.001	U	0.0007	U	0.001	U
1,3-Dichloropropene (total)	542-75-6	--	--	0.11	U	0.087	U	0.002	U	0.001	U	0.002	U
Ethylbenzene	100-41-4	1.4	--	0.047	U	0.041	J	0.0009	U	0.0005	U	0.0008	U
2-Hexanone	591-78-6	--	--	0.12	U	0.097	U	0.002	U	0.001	U	0.002	U
Isopropylbenzene	98-82-8	--	--	0.43	J	0.47	J	0.0009	U	0.0005	U	0.0008	U
Methyl Acetate	79-20-9	--	--	0.34	J	0.39	J	0.002	U	0.001	U	0.002	U
Methyl Tert Butyl Ether (MTBE)	1634-04-4	--	--	0.059	U	0.048	U	0.001	U	0.0007	U	0.001	U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-X
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-24-C/0.5-1.0	SED-24-C/2.0-2.5	SED-25-A/0.5-1.0	SED-25-B/0.5-1.0	SED-25-C/0.5-1.0
Date Sampled:	10/4/2019	10/4/2019	10/25/2019	10/24/2019	10/24/2019
Depth (ft):	0.5-1	2-2.5	0.5-1	0.5-1	0.5-1
LAB Sample ID:	1167976	1167977	1184596	1183320	1183318

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
4-methyl-2-pentanone (MIBK)	108-10-1	--	--	0.12	U	0.097	U	0.002	U	0.001	U
Methylcyclohexane	108-87-2	--	--	7.5		6.5		0.001	U	0.0008	U
Methylene chloride	75-09-2	--	--	0.24	U	0.19	U	0.004	U	0.003	U
Styrene	100-42-5	--	--	0.047	U	0.039	U	0.0009	U	0.0005	U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.047	U	0.039	U	0.0009	U	0.0005	U
Tetrachloroethene	127-18-4	0.45	--	0.059	U	0.048	U	0.001	U	0.0007	U
Toluene	108-88-3	2.5	--	0.071	U	0.058	U	0.001	U	0.0008	U
trans-1,2-Dichloroethene	156-60-5	--	--	0.059	U	0.048	U	0.001	U	0.0007	U
trans-1,3-Dichloropropene	10061-02-6	--	--	0.059	U	0.048	U	0.001	U	0.0007	U
Freon 113	76-13-1	--	--	0.071	U	0.058	U	0.001	U	0.0008	U
1,2,3-Trichlorobenzene	87-61-6	--	--	0.59	U	0.48	U	0.011	U	0.007	U
1,1,1-Trichloroethane	71-55-6	--	--	0.071	U	0.058	U	0.001	U	0.0008	U
1,1,2-Trichloroethane	79-00-5	--	--	0.059	U	0.048	U	0.001	U	0.0007	U
Trichloroethene	79-01-6	1.6	--	0.059	U	0.048	U	0.001	U	0.0007	U
Trichlorofluoromethane	75-69-4	--	--	0.083	U	0.068	U	0.002	U	0.001	U
1,2,4-Trichlorobenzene	120-82-1	--	0.0048	0.59	U	0.48	U	0.011	U	0.007	U
Vinyl Chloride	75-01-4	--	--	0.071	U	0.058	U	0.001	U	0.0008	U
m,p-Xylene	179601-23-1	--	--	0.45	J	0.86		0.002	U	0.001	U
o-Xylene	95-47-6	--	--	0.31	J	0.46	J	0.0009	U	0.0005	U
Xylenes (total)	1330-20-7	0.12	--	0.76		1.32		ND		ND	
Total VOC TIC	SRP170	--	--	NA		NA		0.37	J	0.62	J
										0.028	J

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-01-A/2.0-2.5	SED-01-B/2.0-2.5	SED-01-C/2.0-2.5	SED-02-A(R)/0.0- 0.5	SED-02-A(R)/6.0- 6.5	SED-02-B(R)/0.0- 0.5(A)
Date Sampled:	9/23/2019	9/25/2019	9/23/2019	9/27/2019	9/27/2019	9/27/2019
Depth (ft):	2-2.5	2-2.5	2-2.5	0-0.5	6-6.5	0-0.5
LAB Sample ID:	1157567	1159745	1157564	1162106	1162108	1162109

I LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M										
Acenaphthene	83-32-9	0.016	0.5	0.035	U	0.032	U	0.006	U	0.024	U	0.81	0.024
Acenaphthylene	208-96-8	0.044	0.64	0.035	U	0.032	U	0.006	U	0.024	U	0.033	U
Acetophenone	98-86-2	--	--	0.18	U	0.16	U	0.032	U	0.12	U	0.17	U
Anthracene	120-12-7	0.085	1.1	0.035	U	0.47		0.01	J	0.082	J	1.3	0.096
Atrazine	1912-24-9	--	--	2.1	U	1.9	U	0.39	U	1.4	U	2	U
Benzaldehyde	100-52-7	--	--	0.7	U	0.64	U	0.13	U	0.47	U	0.66	U
Benzo(a)pyrene	50-32-8	0.43	1.6	0.035	U	0.69		0.015	J	0.45		0.51	0.44
Benzo(a)anthracene	56-55-3	0.261	1.6	0.07	U	0.83		0.019	J	0.36		0.89	0.37
Benzo(b)fluoranthene	205-99-2	--	1.8	0.035	U	0.86		0.023	J	0.49		0.65	0.64
Benzo(ghi)perylene	191-24-2	0.17	--	0.035	U	0.64		0.014	J	0.39		0.3	0.48
Benzo(k)fluoranthene	207-08-9	0.24	--	0.035	U	0.43		0.01	J	0.2		0.23	0.22
1,1-Biphenyl	92-52-4	--	--	0.18	U	0.16	U	0.032	U	0.12	U	0.17	U
Bis(2-Chloroethoxy)methane	111-91-1	--	--	0.18	U	0.16	U	0.032	U	0.12	U	0.17	U
bis(2-Chloroethyl)ether	111-44-4	--	--	0.25	U	0.22	U	0.045	U	0.17	U	0.23	U
bis(2-Chloroisopropyl)ether	108-60-1	--	--	0.21	U	0.19	U	0.039	U	0.14	U	0.2	U
bis(2-Ethylhexyl)phthalate	117-81-7	0.18216	2.64651	0.7	U	8.6		0.13	U	0.56	J	0.66	U
4-Bromophenyl-phenylether	101-55-3	--	--	0.25	U	0.22	U	0.045	U	0.17	U	0.23	U
Butyl benzyl phthalate	85-68-7	--	0.063	0.7	U	0.64	U	0.13	U	0.47	U	0.66	U
Caprolactam	105-60-2	--	--	0.35	U	0.32	U	0.065	U	0.24	U	0.33	U
Carbazole	86-74-8	--	--	0.18	U	0.16	U	0.032	U	0.12	U	0.17	U
2-Chloronaphthalene	91-58-7	--	--	0.07	U	0.064	U	0.013	U	0.047	U	0.066	U
2-Chlorophenol	95-57-8	--	0.008	0.18	U	0.16	U	0.032	U	0.12	U	0.17	U
4-Chlorophenyl-phenylether	7005-72-3	--	--	0.21	U	0.19	U	0.039	U	0.14	U	0.2	U
Chrysene	218-01-9	0.384	2.8	0.035	U	1.2		0.023	J	0.32		1	0.38
Dibenz(a,h)anthracene	53-70-3	0.063	0.26	0.07	U	0.18		0.013	U	0.072	J	0.098	J
Dibenzofuran	132-64-9	--	--	0.18	U	0.16	U	0.032	U	0.12	U	0.38	U
3,3'-Dichlorobenzidine	91-94-1	--	--	1.1	U	0.96	U	0.19	U	0.71	U	1	U
2,4-Dichlorophenol	120-83-2	--	0.005	0.21	U	0.19	U	0.039	U	0.14	U	0.2	U
Diethyl phthalate	84-66-2	--	0.006	0.7	U	0.64	U	0.13	U	0.47	U	0.66	U
2,4-Dimethyl phenol	105-67-9	--	--	0.32	U	0.29	U	0.058	U	0.21	U	0.3	U
Dimethyl phthalate	131-11-3	--	--	0.7	U	0.64	U	0.13	U	0.47	U	0.66	U
Di-n-butyl phthalate	84-74-2	--	0.058	0.7	U	0.64	U	0.13	U	0.47	U	0.66	U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC = NJDEP Ecological Screening Criteria, March 2005
ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-E = Saline Water Sediment Effects Range Low (per NJDEP ESC)
ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

ESC ER-M – Saline Water Sediment Effects Range
Bold indicates concentrations above the ESC ER-L

Bold indicates concentrations above the ESC ER-L
Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-01-A/2.0-2.5	SED-01-B/2.0-2.5	SED-01-C/2.0-2.5	SED-02-A(R)/0.0-	SED-02-A(R)/6.0-	SED-02-B(R)/0.0-
				0.5	6.5	0.5(A)
Date Sampled:	9/23/2019	9/25/2019	9/23/2019	9/27/2019	9/27/2019	9/27/2019
Depth (ft):	2-2.5	2-2.5	2-2.5	0-0.5	6-6.5	0-0.5
LAB Sample ID:	1157567	1159745	1157564	1162106	1162108	1162109
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster
	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M												
4,6-Dinitro-2-methylphenol	534-52-1	--	--	2.5	U	2.2	U	0.45	U	1.7	U	2.3	U	1.7	U
2,4-Dinitrophenol	51-28-5	--	--	3.5	U	3.2	U	0.65	U	2.4	U	3.3	U	2.4	U
Dinitrotoluene (2,4-2,6- mixture)	25321-14-6	--	--	ND											
2,4-Dinitrotoluene	121-14-2	--	--	0.7	U	0.64	U	0.13	U	0.47	U	0.66	U	0.48	U
2,6-Dinitrotoluene	606-20-2	--	--	0.25	U	0.22	U	0.045	U	0.17	U	0.23	U	0.17	U
Di-n-octyl phthalate	117-84-0	--	--	0.7	U	0.64	U	0.13	U	0.47	U	0.66	U	0.48	U
1,4-Dioxane	123-91-1	--	--	1.1	U	0.96	U	0.19	U	0.71	U	1	U	0.71	U
Fluoranthene	206-44-0	0.6	5.1	0.045	J	2		0.036		0.55		1.6		0.53	
Fluorene	86-73-7	0.019	0.54	0.035	U	0.032	U	0.007	J	0.024	U	1.3		0.024	U
Hexachlorobenzene	118-74-1	0.02	--	0.07	U	0.064	U	0.013	U	0.047	U	0.066	U	0.048	U
Hexachlorobutadiene	87-68-3	--	0.0013	0.39	U	0.35	U	0.071	U	0.26	U	0.37	U	0.26	U
Hexachlorocyclopentadiene	77-47-4	--	--	2.1	U	1.9	U	0.39	U	1.4	U	2	U	1.4	U
Hexachloroethane	67-72-1	--	0.073	0.35	U	0.32	U	0.065	U	0.24	U	0.33	U	0.24	U
High Molecular Weight PAHs	SRP420	--	--	ND		7.23		0.155		3.202		6.128		3.67	
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	--	0.035	U	0.4		0.01	J	0.28		0.25		0.27	
Isophorone	78-59-1	--	--	0.18	U	0.16	U	0.032	U	0.12	U	0.17	U	0.12	U
Low Molecular Weight PAHs	SRP419	--	--	0.045		2.992		0.07		0.842		13.43		0.891	
2-Methylnaphthalene	91-57-6	0.07	0.67	0.035	U	0.082	J	0.006	U	0.024	U	3.5		0.045	J
2-Methylphenol	95-48-7	--	--	0.18	U	0.16	U	0.032	U	0.12	U	0.17	U	0.12	U
3&4-Methylphenol	65794-96-9	--	--	ND											
4-Methylphenol	106-44-5	--	--	0.18	U	0.16	U	0.032	U	0.12	U	0.17	U	0.12	U
Naphthalene	91-20-3	0.16	2.1	0.07	U	0.09	J	0.013	U	0.047	U	0.72		0.048	U
2-Nitroaniline	88-74-4	--	--	0.18	U	0.16	U	0.032	U	0.12	U	0.17	U	0.12	U
3-Nitroaniline	99-09-2	--	--	0.7	U	0.64	U	0.13	U	0.47	U	0.66	U	0.48	U
4-Nitroaniline	100-01-6	--	--	0.7	U	0.64	U	0.13	U	0.47	U	0.66	U	0.48	U
Nitrobenzene	98-95-3	--	--	0.28	U	0.26	U	0.052	U	0.19	U	0.27	U	0.19	U
2-Nitrophenol	88-75-5	--	--	0.28	U	0.26	U	0.052	U	0.19	U	0.27	U	0.19	U
4-Nitrophenol	100-02-7	--	--	1.8	U	1.6	U	0.32	U	1.2	U	1.7	U	1.2	U
n-Nitrosodi-n-propylamine	621-64-7	--	--	0.25	U	0.22	U	0.045	U	0.17	U	0.23	U	0.17	U
n-Nitrosodiphenylamine	86-30-6	--	--	0.18	U	0.16	U	0.032	U	0.12	U	0.17	U	0.12	U
p-Chloroaniline	106-47-8	--	--	0.35	U	0.32	U	0.065	U	0.24	U	0.33	U	0.24	U
p-Chloro-m-cresol	59-50-7	--	--	0.25	U	0.22	U	0.045	U	0.17	U	0.23	U	0.17	U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-01-A/2.0-2.5	SED-01-B/2.0-2.5	SED-01-C/2.0-2.5	SED-02-A(R)/0.0-	SED-02-A(R)/6.0-	SED-02-B(R)/0.0-	
				0.5	6.5	0.5(A)	
Date Sampled:	9/23/2019	9/25/2019	9/23/2019	9/27/2019	9/27/2019	9/27/2019	9/27/2019
Depth (ft):	2-2.5	2-2.5	2-2.5	0-0.5	6-6.5	0-0.5	
LAB Sample ID:	1157567	1159745	1157564	1162106	1162108	1162109	
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M												
Pentachlorophenol	87-86-5	--	0.017	0.7	U	0.64	U	0.13	U	0.47	U	0.66	U	0.48	U
Phenanthrene	85-01-8	0.24		1.5	0.035	U	0.35		0.017	J	0.21		4.2		0.22
Phenol	108-95-2	--	0.13	0.18	U	0.16	U	0.032	U	0.12	U	0.17	U	0.12	U
Pyrene	129-00-0	0.665		2.6	0.035	U	2		0.041		0.64		2.2		0.79
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	0.18	U	0.16	U	0.032	U	0.12	U	0.17	U	0.12	U
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	0.7	U	0.64	U	0.13	U	0.47	U	0.66	U	0.48	U
Total PAHs	130498-29-2	4	45	0.045		10.222		0.225		4.044		19.558		4.561	
2,4,5-Trichlorophenol	95-95-4	--	0.003	0.32	U	0.29	U	0.058	U	0.21	U	0.3	U	0.21	U
2,4,6-Trichlorophenol	88-06-2	--	0.006	0.28	U	0.26	U	0.052	U	0.19	U	0.27	U	0.19	U
Total SVOC TIC	SRP171	--	--	140	JB	94	J	12	JB	9.3	JB	86	J	33	JB
Total VOC and SVOC TICs	SRP351	--	--	140		102.4		12.38		NA		160		NA	

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-02-B(R)/0.0-	SED-02-B(R)/3.5-	SED-02-C(R)/0.0-	SED-02-C(R)/2.0-	SED-03-A/6.0-6.5	SED-03-B(R)/1.5-
	0.5(B)	4.0	0.5	2.5		2.0
Date Sampled:	9/27/2019	9/27/2019	9/27/2019	9/27/2019	9/30/2019	9/30/2019
Depth (ft):	0-0.5	3.5-4	0-0.5	2-2.5	6-6.5	1.5-2
LAB Sample ID:	1162110	1162112	1162103	1162105	1163618	1163621
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M									
Acenaphthene	83-32-9	0.016	0.5	0.027	U	0.045	J	0.028	U	0.77		0.036
Acenaphthylene	208-96-8	0.044	0.64	0.027	U	0.032	U	0.028	U	0.61		0.036
Acetophenone	98-86-2	--	--	0.13	U	0.16	U	0.14	U	0.16	U	0.18
Anthracene	120-12-7	0.085	1.1	0.11	J	0.079	J	0.044	J	2		0.98
Atrazine	1912-24-9	--	--	1.6	U	1.9	U	1.7	U	2	U	2.2
Benzaldehyde	100-52-7	--	--	0.53	U	0.64	U	0.57	U	0.65	U	0.72
Benzo(a)pyrene	50-32-8	0.43	1.6	0.68		0.081	J	0.17		0.47		0.33
Benzo(a)anthracene	56-55-3	0.261	1.6	0.48		0.088	J	0.16		0.75		0.65
Benzo(b)fluoranthene	205-99-2	--	1.8	0.77		0.1	J	0.25		0.7		0.33
Benzo(ghi)perylene	191-24-2	0.17	--	0.93		0.085	J	0.16		0.37		0.26
Benzo(k)fluoranthene	207-08-9	0.24	--	0.26		0.033	J	0.078	J	0.29		0.036
1,1-Biphenyl	92-52-4	--	--	0.13	U	0.16	U	0.14	U	0.16	U	0.18
Bis(2-Chloroethoxy)methane	111-91-1	--	--	0.13	U	0.16	U	0.14	U	0.16	U	0.18
bis(2-Chloroethyl)ether	111-44-4	--	--	0.19	U	0.22	U	0.2	U	0.23	U	0.25
bis(2-Chloroisopropyl)ether	108-60-1	--	--	0.16	U	0.19	U	0.17	U	0.2	U	0.22
bis(2-Ethylhexyl)phthalate	117-81-7	0.18216	2.64651	1.9		0.64	U	2.3		0.65	U	0.72
4-Bromophenyl-phenylether	101-55-3	--	--	0.19	U	0.22	U	0.2	U	0.23	U	0.25
Butyl benzyl phthalate	85-68-7	--	0.063	0.53	U	0.64	U	0.57	U	0.65	U	0.72
Caprolactam	105-60-2	--	--	0.27	U	0.32	U	0.28	U	0.33	U	5
Carbazole	86-74-8	--	--	0.13	U	0.16	U	0.14	U	0.16	U	0.18
2-Chloronaphthalene	91-58-7	--	--	0.053	U	0.064	U	0.057	U	0.065	U	0.072
2-Chlorophenol	95-57-8	--	0.008	0.13	U	0.16	U	0.14	U	0.16	U	0.18
4-Chlorophenyl-phenylether	7005-72-3	--	--	0.16	U	0.19	U	0.17	U	0.2	U	0.22
Chrysene	218-01-9	0.384	2.8	0.66		0.1	J	0.22		1.8		1.2
Dibenz(a,h)anthracene	53-70-3	0.063	0.26	0.16		0.064	U	0.057	U	0.09	J	0.072
Dibenzofuran	132-64-9	--	--	0.13	U	0.16	U	0.14	U	0.68		0.18
3,3'-Dichlorobenzidine	91-94-1	--	--	0.8	U	0.96	U	0.85	U	0.98	U	1.1
2,4-Dichlorophenol	120-83-2	--	0.005	0.16	U	0.19	U	0.17	U	0.2	U	0.22
Diethyl phthalate	84-66-2	--	0.006	0.53	U	0.64	U	0.57	U	0.65	U	0.72
2,4-Dimethyl phenol	105-67-9	--	--	0.24	U	0.29	U	0.26	U	0.29	U	0.32
Dimethyl phthalate	131-11-3	--	--	0.53	U	0.64	U	0.57	U	0.65	U	0.72
Di-n-butyl phthalate	84-74-2	--	0.058	0.53	U	0.64	U	0.57	U	0.65	U	0.72
												0.53

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-02-B(R)/0.0-	SED-02-B(R)/3.5-	SED-02-C(R)/0.0-	SED-02-C(R)/2.0-	SED-03-A/6.0-6.5	SED-03-B(R)/1.5-
	0.5(B)	4.0	0.5	2.5		2.0
Date Sampled:	9/27/2019	9/27/2019	9/27/2019	9/27/2019	9/30/2019	9/30/2019
Depth (ft):	0-0.5	3.5-4	0-0.5	2-2.5	6-6.5	1.5-2
LAB Sample ID:	1162110	1162112	1162103	1162105	1163618	1163621
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M																		
4,6-Dinitro-2-methylphenol	534-52-1	--	--	1.9	U	2.2	U	2	U	2.3	U	2.5	U	1.9	U						
2,4-Dinitrophenol	51-28-5	--	--	2.7	U	3.2	U	2.8	U	3.3	U	3.6	U	2.6	U						
Dinitrotoluene (2,4-2,6- mixture)	25321-14-6	--	--	ND		ND		ND		ND		ND		ND							
2,4-Dinitrotoluene	121-14-2	--	--	0.53	U	0.64	U	0.57	U	0.65	U	0.72	U	0.53	U						
2,6-Dinitrotoluene	606-20-2	--	--	0.19	U	0.22	U	0.2	U	0.23	U	0.25	U	0.19	U						
Di-n-octyl phthalate	117-84-0	--	--	0.53	U	0.64	U	0.57	U	0.65	U	0.72	U	0.53	U						
1,4-Dioxane	123-91-1	--	--	0.8	U	0.96	U	0.85	U	0.98	U	1.1	U	0.79	U						
Fluoranthene	206-44-0	0.6	5.1	0.62		0.2		0.28		1.9		1.1		2.4							
Fluorene	86-73-7	0.019	0.54	0.027	U	0.093	J	0.028	U	0.82		1.2		0.28							
Hexachlorobenzene	118-74-1	0.02	--	0.053	U	0.064	U	0.057	U	0.065	U	0.072	U	0.053	U						
Hexachlorobutadiene	87-68-3	--	0.0013	0.29	U	0.35	U	0.31	U	0.36	U	0.4	U	0.29	U						
Hexachlorocyclopentadiene	77-47-4	--	--	1.6	U	1.9	U	1.7	U	2	U	2.2	U	1.6	U						
Hexachloroethane	67-72-1	--	0.073	0.27	U	0.32	U	0.28	U	0.33	U	0.36	U	0.26	U						
High Molecular Weight PAHs	SRP420	--	--	5.41		0.75		1.627		8.31		5		7.7							
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	--	0.37		0.053	J	0.099	J	0.24		0.23		0.56							
Isophorone	78-59-1	--	--	0.13	U	0.16	U	0.14	U	0.16	U	0.18	U	0.13	U						
Low Molecular Weight PAHs	SRP419	--	--	1.054		1.037		0.461		11.75		12.98		4.61							
2-Methylnaphthalene	91-57-6	0.07	0.67	0.064	J	0.3	J	0.063	J	0.82		3.3		0.16	J						
2-Methylphenol	95-48-7	--	--	0.13	U	0.16	U	0.14	U	0.16	U	0.18	U	0.13	U						
3&4-Methylphenol	65794-96-9	--	--	ND		ND		ND		ND		ND		ND							
4-Methylphenol	106-44-5	--	--	0.13	U	0.16	U	0.14	U	0.16	U	0.18	U	0.13	U						
Naphthalene	91-20-3	0.16	2.1	0.053	U	0.12	J	0.057	U	0.63		1.1		0.053	U						
2-Nitroaniline	88-74-4	--	--	0.13	U	0.16	U	0.14	U	0.16	U	0.18	U	0.13	U						
3-Nitroaniline	99-09-2	--	--	0.53	U	0.64	U	0.57	U	0.65	U	0.72	U	0.53	U						
4-Nitroaniline	100-01-6	--	--	0.53	U	0.64	U	0.57	U	0.65	U	0.72	U	0.53	U						
Nitrobenzene	98-95-3	--	--	0.21	U	0.26	U	0.23	U	0.26	U	0.29	U	0.21	U						
2-Nitrophenol	88-75-5	--	--	0.21	U	0.26	U	0.23	U	0.26	U	0.29	U	0.21	U						
4-Nitrophenol	100-02-7	--	--	1.3	U	1.6	U	1.4	U	1.6	U	1.8	U	1.3	U						
n-Nitrosodi-n-propylamine	621-64-7	--	--	0.19	U	0.22	U	0.2	U	0.23	U	0.25	U	0.19	U						
n-Nitrosodiphenylamine	86-30-6	--	--	0.13	U	0.16	U	0.14	U	0.16	U	0.18	U	0.13	U						
p-Chloroaniline	106-47-8	--	--	0.27	U	0.32	U	0.28	U	0.33	U	0.36	U	0.26	U						
p-Chloro-m-cresol	59-50-7	--	--	0.19	U	0.22	U	0.2	U	0.23	U	0.25	U	0.19	U						

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ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-02-B(R)/0.0-	SED-02-B(R)/3.5-	SED-02-C(R)/0.0-	SED-02-C(R)/2.0-	SED-03-A/6.0-6.5	SED-03-B(R)/1.5-	
	0.5(B)	4.0	0.5	2.5		2.0	
Date Sampled:	9/27/2019	9/27/2019	9/27/2019	9/27/2019	9/30/2019	9/30/2019	
Depth (ft):	0-0.5	3.5-4	0-0.5	2-2.5	6-6.5	1.5-2	
LAB Sample ID:	1162110	1162112	1162103	1162105	1163618	1163621	
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M													
Pentachlorophenol	87-86-5	--	0.017	0.53	U	0.64	U	0.57	U	0.65	U	0.72	U	0.53	U	
Phenanthrene	85-01-8	0.24		1.5	0.26		0.2		0.074	J	4.2		5.3		0.95	
Phenol	108-95-2	--	0.13	0.13	U	0.16	U	0.14	U	0.16	U	0.18	U	0.13	U	
Pyrene	129-00-0	0.665		2.6	1.1		0.21		0.49		3.6		2		2.1	
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	0.13	U	0.16	U	0.14	U	0.16	U	0.18	U	0.13	U	
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	0.53	U	0.64	U	0.57	U	0.65	U	0.72	U	0.53	U	
Total PAHs	130498-29-2	4	45	6.464		1.787		2.088		20.06		17.98		12.31		
2,4,5-Trichlorophenol	95-95-4	--	0.003	0.24	U	0.29	U	0.26	U	0.29	U	0.32	U	0.24	U	
2,4,6-Trichlorophenol	88-06-2	--	0.006	0.21	U	0.26	U	0.23	U	0.26	U	0.29	U	0.21	U	
Total SVOC TIC	SRP171	--	--	53	J	22	JB	28	JB	90	J	NA		NA		
Total VOC and SVOC TICs	SRP351	--	--	NA		37		NA		184		NA		NA		

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ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-03-B(R)/4.5-	SED-03-C(R)/1.5-	SED-03-C(R)/6.0-	SED-04-B/2.0-2.5	SED-04-B/2.0-2.5	SED-04-C(R)/1.5-
	5.0	2.0	6.5	(A)	(B)	2.0
Date Sampled:	9/30/2019	9/30/2019	9/30/2019	10/1/2019	10/1/2019	10/1/2019
Depth (ft):	4.5-5	1.5-2	6-6.5	2-2.5	2-2.5	1.5-2
LAB Sample ID:	1163622	1163613	1163615	1164533	1164534	1164531
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster
	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M										
Acenaphthene	83-32-9	0.016	0.5	0.1	0.031	U	0.036	U	0.005	U	0.029	U	0.036
Acenaphthylene	208-96-8	0.044	0.64	0.073	J	0.031	U	0.31		0.005	U	0.029	U
Acetophenone	98-86-2	--	--	0.075	U	0.15	U	0.18	U	0.026	U	0.14	U
Anthracene	120-12-7	0.085	1.1	0.2		1.3		0.23		0.039		0.029	U
Atrazine	1912-24-9	--	--	0.91	U	1.8	U	2.1	U	0.31	U	1.7	U
Benzaldehyde	100-52-7	--	--	0.3	U	0.61	U	0.72	U	0.1	U	0.57	U
Benzo(a)pyrene	50-32-8	0.43	1.6	0.27		0.87		0.036	U	0.051		0.18	
Benzo(a)anthracene	56-55-3	0.261	1.6	0.3		1		0.15	J	0.051		0.14	J
Benzo(b)fluoranthene	205-99-2	--	1.8	0.3		0.83		0.036	U	0.059		0.23	
Benzo(ghi)perylene	191-24-2	0.17	--	0.3		0.77		0.036	U	0.04		0.2	
Benzo(k)fluoranthene	207-08-9	0.24	--	0.087		0.26		0.036	U	0.005	U	0.029	U
1,1-Biphenyl	92-52-4	--	--	0.075	U	0.15	U	0.18	U	0.026	U	0.14	U
Bis(2-Chloroethoxy)methane	111-91-1	--	--	0.075	U	0.15	U	0.18	U	0.026	U	0.14	U
bis(2-Chloroethyl)ether	111-44-4	--	--	0.11	U	0.21	U	0.25	U	0.036	U	0.2	U
bis(2-Chloroisopropyl)ether	108-60-1	--	--	0.091	U	0.18	U	0.21	U	0.031	U	0.17	U
bis(2-Ethylhexyl)phthalate	117-81-7	0.18216	2.64651	1.3		6.3		0.72	U	0.26		0.57	U
4-Bromophenyl-phenylether	101-55-3	--	--	0.11	U	0.21	U	0.25	U	0.036	U	0.2	U
Butyl benzyl phthalate	85-68-7	--	0.063	0.3	U	0.61	U	0.72	U	0.1	U	0.57	U
Caprolactam	105-60-2	--	--	0.15	U	0.31	U	7.3		0.79		0.29	U
Carbazole	86-74-8	--	--	0.075	U	0.15	U	0.18	U	0.026	U	0.14	U
2-Chloronaphthalene	91-58-7	--	--	0.03	U	0.061	U	0.072	U	0.01	U	0.057	U
2-Chlorophenol	95-57-8	--	0.008	0.075	U	0.15	U	0.18	U	0.026	U	0.14	U
4-Chlorophenyl-phenylether	7005-72-3	--	--	0.091	U	0.18	U	0.21	U	0.031	U	0.17	U
Chrysene	218-01-9	0.384	2.8	0.37		2.1		0.27		0.099		0.19	0.61
Dibenz(a,h)anthracene	53-70-3	0.063	0.26	0.068	J	0.061	U	0.072	U	0.01	U	0.057	U
Dibenzofuran	132-64-9	--	--	0.075	U	0.15	U	0.18	U	0.026	U	0.14	U
3,3'-Dichlorobenzidine	91-94-1	--	--	0.45	U	0.92	U	1.1	U	0.15	U	0.86	U
2,4-Dichlorophenol	120-83-2	--	0.005	0.091	U	0.18	U	0.21	U	0.031	U	0.17	U
Diethyl phthalate	84-66-2	--	0.006	0.3	U	0.61	U	0.72	U	0.1	U	0.57	U
2,4-Dimethyl phenol	105-67-9	--	--	0.14	U	0.27	U	0.32	U	0.046	U	0.26	U
Dimethyl phthalate	131-11-3	--	--	0.3	U	0.61	U	0.72	U	0.1	U	0.57	U
Di-n-butyl phthalate	84-74-2	--	0.058	0.3	U	0.61	U	0.72	U	0.1	U	0.57	U
												0.71	U

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Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-03-B(R)/4.5-	SED-03-C(R)/1.5-	SED-03-C(R)/6.0-	SED-04-B/2.0-2.5	SED-04-B/2.0-2.5	SED-04-C(R)/1.5-
	5.0	2.0	6.5	(A)	(B)	2.0
Date Sampled:	9/30/2019	9/30/2019	9/30/2019	10/1/2019	10/1/2019	10/1/2019
Depth (ft):	4.5-5	1.5-2	6-6.5	2-2.5	2-2.5	1.5-2
LAB Sample ID:	1163622	1163613	1163615	1164533	1164534	1164531
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M										
4,6-Dinitro-2-methylphenol	534-52-1	--	--	1.1	U	2.1	U	2.5	U	0.36	U	2	U
2,4-Dinitrophenol	51-28-5	--	--	1.5	U	3.1	U	3.6	U	0.51	U	2.9	U
Dinitrotoluene (2,4-2,6- mixture)	25321-14-6	--	--	ND		ND		ND		ND		ND	
2,4-Dinitrotoluene	121-14-2	--	--	0.3	U	0.61	U	0.72	U	0.1	U	0.57	U
2,6-Dinitrotoluene	606-20-2	--	--	0.11	U	0.21	U	0.25	U	0.036	U	0.2	U
Di-n-octyl phthalate	117-84-0	--	--	0.3	U	0.61	U	0.72	U	0.1	U	0.57	U
1,4-Dioxane	123-91-1	--	--	0.45	U	0.92	U	1.1	U	0.15	U	0.86	U
Fluoranthene	206-44-0	0.6	5.1	0.59		1.7		0.38		0.12		0.29	
Fluorene	86-73-7	0.019	0.54	0.17		2.4		0.54		0.048		0.029	U
Hexachlorobenzene	118-74-1	0.02	--	0.03	U	0.061	U	0.072	U	0.01	U	0.057	U
Hexachlorobutadiene	87-68-3	--	0.0013	0.17	U	0.34	U	0.39	U	0.056	U	0.32	U
Hexachlorocyclopentadiene	77-47-4	--	--	0.91	U	1.8	U	2.1	U	0.31	U	1.7	U
Hexachloroethane	67-72-1	--	0.073	0.15	U	0.31	U	0.36	U	0.051	U	0.29	U
High Molecular Weight PAHs	SRP420	--	--	2.485		9.62		0.98		0.483		1.3	
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	--	0.13		0.39		0.036	U	0.023	J	0.029	U
Isophorone	78-59-1	--	--	0.075	U	0.15	U	0.18	U	0.026	U	0.14	U
Low Molecular Weight PAHs	SRP419	--	--	2.053		35.7		7.98		0.468		0.63	
2-Methylnaphthalene	91-57-6	0.07	0.67	0.38		19		4		0.082		0.16	J
2-Methylphenol	95-48-7	--	--	0.075	U	0.15	U	0.18	U	0.026	U	0.14	U
3&4-Methylphenol	65794-96-9	--	--	ND		ND		ND		ND		ND	
4-Methylphenol	106-44-5	--	--	0.075	U	0.15	U	0.18	U	0.026	U	0.14	U
Naphthalene	91-20-3	0.16	2.1	0.03	U	3.9		1.6		0.039		0.057	U
2-Nitroaniline	88-74-4	--	--	0.075	U	0.15	U	0.18	U	0.026	U	0.14	U
3-Nitroaniline	99-09-2	--	--	0.3	U	0.61	U	0.72	U	0.1	U	0.57	U
4-Nitroaniline	100-01-6	--	--	0.3	U	0.61	U	0.72	U	0.1	U	0.57	U
Nitrobenzene	98-95-3	--	--	0.12	U	0.24	U	0.29	U	0.041	U	0.23	U
2-Nitrophenol	88-75-5	--	--	0.12	U	0.24	U	0.29	U	0.041	U	0.23	U
4-Nitrophenol	100-02-7	--	--	0.75	U	1.5	U	1.8	U	0.26	U	1.4	U
n-Nitrosodi-n-propylamine	621-64-7	--	--	0.11	U	0.21	U	0.25	U	0.036	U	0.2	U
n-Nitrosodiphenylamine	86-30-6	--	--	0.075	U	7.7		0.18	U	0.1		0.14	U
p-Chloroaniline	106-47-8	--	--	0.15	U	0.31	U	0.36	U	0.051	U	0.29	U
p-Chloro-m-cresol	59-50-7	--	--	0.11	U	0.21	U	0.25	U	0.036	U	0.2	U

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Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-03-B(R)/4.5-	5.0	SED-03-C(R)/1.5-	2.0	SED-03-C(R)/6.0-	6.5	SED-04-B/2.0-2.5	(A)	SED-04-B/2.0-2.5	(B)	SED-04-C(R)/1.5-	2.0
Date Sampled:	9/30/2019			9/30/2019			10/1/2019			10/1/2019		
Depth (ft):	4.5-5			1.5-2			6-6.5			2-2.5		
LAB Sample ID:	1163622			1163613			1163615			1164533		
LAB:	Eurofins			Lancaster			Eurofins			Lancaster		

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M									
Pentachlorophenol	87-86-5	--	0.017	0.3	U	0.61	U	0.72	U	0.1	U	0.57
Phenanthrene	85-01-8	0.24		1.5	0.54		7.4		0.92		0.14	0.18
Phenol	108-95-2	--	0.13	0.075	U	0.15	U	0.18	U	0.026	U	0.14
Pyrene	129-00-0	0.665		2.6	0.66		3.4		0.56		0.16	0.36
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	0.075	U	0.15	U	0.18	U	0.026	U	0.14
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	0.3	U	0.61	U	0.72	U	0.1	U	0.57
Total PAHs	130498-29-2	4	45	4.538		45.32		8.96		0.951		1.93
2,4,5-Trichlorophenol	95-95-4	--	0.003	0.14	U	0.27	U	0.32	U	0.046	U	0.26
2,4,6-Trichlorophenol	88-06-2	--	0.006	0.12	U	0.24	U	0.29	U	0.041	U	0.23
Total SVOC TIC	SRP171	--	--	NA		NA		NA		20	J	110
Total VOC and SVOC TICs	SRP351	--	--	NA		NA		NA		44		164
												128

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-04-C(R)/2.0-	2.5	SED-05-A/2.0-2.5	SED-05-B/2.0-2.5	SED-05-C/6.0-6.5	SED-06-A/2.0-2.5	SED-06-B(R)/4.0-	4.5
Date Sampled:	10/1/2019		10/1/2019	10/1/2019	10/1/2019	10/2/2019	10/2/2019	
Depth (ft):	2-2.5		2-2.5	2-2.5	6-6.5	2-2.5	4-4.5	
LAB Sample ID:	1164532		1164545	1164542	1164548	1165586	1165589	
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
Acenaphthene	83-32-9	0.016	0.5	0.034	U	0.078	0.16	0.56	0.46	0.006	U
Acenaphthylene	208-96-8	0.044	0.64	0.87		0.037	0.07	0.006	U	0.34	0.006
Acetophenone	98-86-2	--	--	0.17	U	0.03	U	0.024	U	0.029	U
Anthracene	120-12-7	0.085	1.1	2.5		0.32	0.63	0.66	1	0.16	U
Atrazine	1912-24-9	--	--	2	U	0.36	U	0.28	U	0.34	U
Benzaldehyde	100-52-7	--	--	0.68	U	0.12	U	0.095	U	0.11	U
Benzo(a)pyrene	50-32-8	0.43	1.6	0.76		0.99	1.8	0.26	0.66		0.084
Benzo(a)anthracene	56-55-3	0.261	1.6	1.1		1.1	2.3	0.44	1.2		0.13
Benzo(b)fluoranthene	205-99-2	--	1.8	0.68		1.2	1.8	0.4		0.76	0.12
Benzo(ghi)perylene	191-24-2	0.17	--	0.55		0.78	1.2	0.17	0.37		0.06
Benzo(k)fluoranthene	207-08-9	0.24	--	0.034	U	0.43	0.72	0.11	0.29		0.04
1,1-Biphenyl	92-52-4	--	--	0.17	U	0.03	U	0.048	J	0.029	U
Bis(2-Chloroethoxy)methane	111-91-1	--	--	0.17	U	0.03	U	0.024	U	0.029	U
bis(2-Chloroethyl)ether	111-44-4	--	--	0.24	U	0.042	U	0.033	U	0.04	U
bis(2-Chloroisopropyl)ether	108-60-1	--	--	0.2	U	0.036	U	0.028	U	0.034	U
bis(2-Ethylhexyl)phthalate	117-81-7	0.18216	2.64651	0.68	U	2.6	2.5	0.11	U	1	J
4-Bromophenyl-phenylether	101-55-3	--	--	0.24	U	0.042	U	0.033	U	0.04	U
Butyl benzyl phthalate	85-68-7	--	0.063	0.68	U	0.12	U	0.095	U	0.11	U
Caprolactam	105-60-2	--	--	0.34	U	0.06	U	0.047	U	0.057	U
Carbazole	86-74-8	--	--	0.17	U	0.072		0.18		0.029	U
2-Chloronaphthalene	91-58-7	--	--	0.068	U	0.012	U	0.009	U	0.011	U
2-Chlorophenol	95-57-8	--	0.008	0.17	U	0.03	U	0.024	U	0.029	U
4-Chlorophenyl-phenylether	7005-72-3	--	--	0.2	U	0.036	U	0.028	U	0.034	U
Chrysene	218-01-9	0.384	2.8	1.9		1.1	2.4	0.6	1.4		0.16
Dibenz(a,h)anthracene	53-70-3	0.063	0.26	0.068	U	0.16	0.26		0.043	0.1	J
Dibenzofuran	132-64-9	--	--	0.85		0.038	J	0.069		0.27	
3,3'-Dichlorobenzidine	91-94-1	--	--	1	U	0.18	U	0.14	U	0.17	U
2,4-Dichlorophenol	120-83-2	--	0.005	0.2	U	0.036	U	0.028	U	0.034	U
Diethyl phthalate	84-66-2	--	0.006	0.68	U	0.12	U	0.095	U	0.11	U
2,4-Dimethyl phenol	105-67-9	--	--	0.31	U	0.054	U	0.043	U	0.052	U
Dimethyl phthalate	131-11-3	--	--	0.68	U	0.12	U	0.095	U	0.11	U
Di-n-butyl phthalate	84-74-2	--	0.058	0.68	U	0.12	U	0.095	U	0.11	U
										0.64	U
										0.12	U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

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ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

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U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-04-C(R)/2.0-	2.5	SED-05-A/2.0-2.5	SED-05-B/2.0-2.5	SED-05-C/6.0-6.5	SED-06-A/2.0-2.5	SED-06-B(R)/4.0-	4.5
Date Sampled:	10/1/2019		10/1/2019	10/1/2019	10/1/2019	10/2/2019	10/2/2019	
Depth (ft):	2-2.5		2-2.5	2-2.5	6-6.5	2-2.5	4-4.5	
LAB Sample ID:	1164532		1164545	1164542	1164548	1165586	1165589	
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M													
4,6-Dinitro-2-methylphenol	534-52-1	--	--	2.4	U	0.42	U	0.33	U	0.4	U	2.2	U	0.43	U	
2,4-Dinitrophenol	51-28-5	--	--	3.4	U	0.6	U	0.47	U	0.57	U	3.2	U	0.62	U	
Dinitrotoluene (2,4-2,6- mixture)	25321-14-6	--	--	ND												
2,4-Dinitrotoluene	121-14-2	--	--	0.68	U	0.12	U	0.095	U	0.11	U	0.64	U	0.12	U	
2,6-Dinitrotoluene	606-20-2	--	--	0.24	U	0.042	U	0.033	U	0.04	U	0.22	U	0.043	U	
Di-n-octyl phthalate	117-84-0	--	--	0.68	U	0.12	U	0.095	U	0.11	U	1	J	0.12	U	
1,4-Dioxane	123-91-1	--	--	1	U	0.18	U	0.14	U	0.17	U	0.96	U	0.19	U	
Fluoranthene	206-44-0	0.6	5.1	1.7		1.8		3.1		1		1.8		0.27		
Fluorene	86-73-7	0.019	0.54	2.8		0.07		0.21		0.83		0.68		0.096		
Hexachlorobenzene	118-74-1	0.02	--	0.068	U	0.012	U	0.009	U	0.011	U	0.064	U	0.012	U	
Hexachlorobutadiene	87-68-3	--	0.0013	0.37	U	0.066	U	0.052	U	0.063	U	0.35	U	0.068	U	
Hexachlorocyclopentadiene	77-47-4	--	--	2	U	0.36	U	0.28	U	0.34	U	1.9	U	0.37	U	
Hexachloroethane	67-72-1	--	0.073	0.34	U	0.06	U	0.047	U	0.057	U	0.32	U	0.062	U	
High Molecular Weight PAHs	SRP420	--	--	9.39		8		14.89		3.253		7.9		0.987		
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	--	0.034	U	0.54		0.81		0.13		0.32		0.05		
Isophorone	78-59-1	--	--	0.17	U	0.03	U	0.024	U	0.029	U	0.16	U	0.031	U	
Low Molecular Weight PAHs	SRP419	--	--	32.37		2.951		5.99		10.37		7.24		0.812		
2-Methylnaphthalene	91-57-6	0.07	0.67	12		0.062		0.12		3.9		0.29	J	0.051	J	
2-Methylphenol	95-48-7	--	--	0.17	U	0.03	U	0.024	U	0.029	U	0.16	U	0.031	U	
3&4-Methylphenol	65794-96-9	--	--	ND		0.27		0.03		ND		ND		ND		
4-Methylphenol	106-44-5	--	--	0.17	U	0.27		0.03	J	0.029	U	0.16	U	0.031	U	
Naphthalene	91-20-3	0.16	2.1	1.5		0.054		0.1		0.82		0.37		0.035		
2-Nitroaniline	88-74-4	--	--	0.17	U	0.03	U	0.024	U	0.029	U	0.16	U	0.031	U	
3-Nitroaniline	99-09-2	--	--	0.68	U	0.12	U	0.095	U	0.11	U	0.64	U	0.12	U	
4-Nitroaniline	100-01-6	--	--	0.68	U	0.12	U	0.095	U	0.11	U	0.64	U	0.12	U	
Nitrobenzene	98-95-3	--	--	0.27	U	0.048	U	0.038	U	0.046	U	0.26	U	0.049	U	
2-Nitrophenol	88-75-5	--	--	0.27	U	0.048	U	0.038	U	0.046	U	0.26	U	0.049	U	
4-Nitrophenol	100-02-7	--	--	1.7	U	0.3	U	0.24	U	0.29	U	1.6	U	0.31	U	
n-Nitrosodi-n-propylamine	621-64-7	--	--	0.24	U	0.042	U	0.033	U	0.04	U	0.22	U	0.043	U	
n-Nitrosodiphenylamine	86-30-6	--	--	4.2		0.03	U	0.024	U	0.029	U	0.16	U	0.031	U	
p-Chloroaniline	106-47-8	--	--	0.34	U	0.06	U	0.047	U	0.057	U	0.32	U	0.062	U	
p-Chloro-m-cresol	59-50-7	--	--	0.24	U	0.042	U	0.033	U	0.04	U	0.22	U	0.043	U	

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U = Compound not detected above MDL

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Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-04-C(R)/2.0-	2.5	SED-05-A/2.0-2.5	SED-05-B/2.0-2.5	SED-05-C/6.0-6.5	SED-06-A/2.0-2.5	SED-06-B(R)/4.0-	4.5
Date Sampled:	10/1/2019		10/1/2019	10/1/2019	10/1/2019	10/2/2019	10/2/2019	
Depth (ft):	2-2.5		2-2.5	2-2.5	6-6.5	2-2.5	4-4.5	
LAB Sample ID:	1164532		1164545	1164542	1164548	1165586	1165589	
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M												
Pentachlorophenol	87-86-5	--	0.017	0.68	U	0.12	U	0.095	U	0.11	U	0.64	U	0.12	U
Phenanthrene	85-01-8	0.24		1.5	<u>11</u>	0.53		1.6		2.6		2.3		0.26	
Phenol	108-95-2	--	0.13	0.17	U	0.03	U	0.024	U	0.029	U	0.16	U	0.031	U
Pyrene	129-00-0	0.665		2.6	4.4		1.7		3.6		1.1		2.8		0.33
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	0.17	U	0.03	U	0.024	U	0.029	U	0.16	U	0.031	U
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	0.68	U	0.12	U	0.095	U	0.11	U	0.64	U	0.12	U
Total PAHs	130498-29-2	4	45	41.76		10.951		20.88		13.623		15.14		1.799	
2,4,5-Trichlorophenol	95-95-4	--	0.003	0.31	U	0.054	U	0.043	U	0.052	U	0.29	U	0.056	U
2,4,6-Trichlorophenol	88-06-2	--	0.006	0.27	U	0.048	U	0.038	U	0.046	U	0.26	U	0.049	U
Total SVOC TIC	SRP171	--	--	110	J	15	J	21	J	26	J	53	J	38	J
Total VOC and SVOC TICs	SRP351	--	--	188		21.9		25.8		196		68		88	

ESC = NJDEP Ecological Screening Criteria, March 2009

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ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-06-C/4.0-4.5	SED-06-C/4.0-4.5	SED-09-A(R)/3.0-	SED-09-B/5.0-5.5	SED-09-C(R)/4.5-	SED-19-B/0.0-0.5
(A)			3.5		5.0	
Date Sampled:	10/2/2019	10/2/2019	10/7/2019	10/7/2019	10/16/2019	9/20/2019
Depth (ft):	4-4.5	4-4.5	3-3.5	5-5.5	4.5-5	0-0.5
LAB Sample ID:	1165582	1165583	1169339	1169336	1176387	1156543
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M									
Acenaphthene	83-32-9	0.016	0.5	0.26	0.68	0.035	U	0.16	J	0.072	U	0.24 U
Acenaphthylene	208-96-8	0.044	0.64	0.028	U	0.31	0.035	U	0.049	U	0.072	U
Acetophenone	98-86-2	--	--	0.14	U	0.16	U	0.18	U	0.24	U	0.36 U
Anthracene	120-12-7	0.085	1.1	0.61	0.97	0.16	J	0.32		1.3		0.57 J
Atrazine	1912-24-9	--	--	1.7	U	1.9	U	2.1	U	2.9	U	4.3 U
Benzaldehyde	100-52-7	--	--	0.55	U	0.63	U	0.7	U	0.97	U	1.4 U
Benzo(a)pyrene	50-32-8	0.43	1.6	0.59		0.65		0.1	J	0.49		0.98
Benzo(a)anthracene	56-55-3	0.261	1.6	0.95		1.1		0.14	J	0.42		1
Benzo(b)fluoranthene	205-99-2	--	1.8	0.7		0.64		0.035	U	0.45		0.82
Benzo(ghi)perylene	191-24-2	0.17	--	0.44		0.73		0.11	J	0.58		0.8
Benzo(k)fluoranthene	207-08-9	0.24	--	0.2		0.19		0.035	U	0.17	J	0.36
1,1-Biphenyl	92-52-4	--	--	0.14	U	0.16	U	0.18	U	0.24	U	0.58 J
Bis(2-Chloroethoxy)methane	111-91-1	--	--	0.14	U	0.16	U	0.18	U	0.24	U	0.36 U
bis(2-Chloroethyl)ether	111-44-4	--	--	0.19	U	0.22	U	0.25	U	0.34	U	0.5 U
bis(2-Chloroisopropyl)ether	108-60-1	--	--	0.17	U	0.19	U	0.21	U	0.29	U	0.43 U
bis(2-Ethylhexyl)phthalate	117-81-7	0.18216	2.64651	1.8		5.4		0.7	U	3.6		8.5
4-Bromophenyl-phenylether	101-55-3	--	--	0.19	U	0.22	U	0.25	U	0.34	U	0.5 U
Butyl benzyl phthalate	85-68-7	--	0.063	0.55	U	0.63	U	0.7	U	0.97	U	1.4 U
Caprolactam	105-60-2	--	--	0.28	U	0.32	U	0.35	U	0.49	U	0.72 U
Carbazole	86-74-8	--	--	0.14	U	0.16	U	0.18	U	0.24	U	0.36 U
2-Chloronaphthalene	91-58-7	--	--	0.055	U	0.063	U	0.07	U	0.097	U	0.14 U
2-Chlorophenol	95-57-8	--	0.008	0.14	U	0.16	U	0.18	U	0.24	U	0.36 U
4-Chlorophenyl-phenylether	7005-72-3	--	--	0.17	U	0.19	U	0.21	U	0.29	U	0.43 U
Chrysene	218-01-9	0.384	2.8	1.2		1.5		0.19		0.6		1.8
Dibenz(a,h)anthracene	53-70-3	0.063	0.26	0.13	J	0.16	J	0.07	U	0.14	J	0.31
Dibenzofuran	132-64-9	--	--	0.24	J	0.53		0.18	U	0.24	U	0.36 U
3,3'-Dichlorobenzidine	91-94-1	--	--	0.83	U	0.95	U	1.1	U	1.5	U	2.2 U
2,4-Dichlorophenol	120-83-2	--	0.005	0.17	U	0.19	U	0.21	U	0.29	U	0.43 U
Diethyl phthalate	84-66-2	--	0.006	0.55	U	0.63	U	0.7	U	0.97	U	1.4 U
2,4-Dimethyl phenol	105-67-9	--	--	0.25	U	0.29	U	0.32	U	0.44	U	0.65 U
Dimethyl phthalate	131-11-3	--	--	0.55	U	0.63	U	0.7	U	0.97	U	1.4 U
Di-n-butyl phthalate	84-74-2	--	0.058	0.55	U	0.63	U	0.7	U	0.97	U	1.4 U
												4.7 U

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Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-06-C/4.0-4.5	SED-06-C/4.0-4.5	SED-09-A(R)/3.0-	SED-09-B/5.0-5.5	SED-09-C(R)/4.5-	SED-19-B/0.0-0.5
(A)			3.5		5.0	
Date Sampled:	10/2/2019	10/2/2019	10/7/2019	10/7/2019	10/16/2019	9/20/2019
Depth (ft):	4-4.5	4-4.5	3-3.5	5-5.5	4.5-5	0-0.5
LAB Sample ID:	1165582	1165583	1169339	1169336	1176387	1156543
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M										
4,6-Dinitro-2-methylphenol	534-52-1	--	--	1.9	U	2.2	U	2.5	U	3.4	U	5	U
2,4-Dinitrophenol	51-28-5	--	--	2.8	U	3.2	U	3.5	U	4.9	U	7.2	U
Dinitrotoluene (2,4-2,6- mixture)	25321-14-6	--	--	ND		ND		ND		ND		ND	
2,4-Dinitrotoluene	121-14-2	--	--	0.55	U	0.63	U	0.7	U	0.97	U	1.4	U
2,6-Dinitrotoluene	606-20-2	--	--	0.19	U	0.22	U	0.25	U	0.34	U	0.5	U
Di-n-octyl phthalate	117-84-0	--	--	0.55	U	0.63	U	0.7	U	0.97	U	1.4	U
1,4-Dioxane	123-91-1	--	--	0.83	U	0.95	U	1.1	U	1.5	U	2.2	U
Fluoranthene	206-44-0	0.6	5.1	1.3		1.4		0.27		0.8		1.5	
Fluorene	86-73-7	0.019	0.54	0.52		1.2		0.2		0.33		1.6	
Hexachlorobenzene	118-74-1	0.02	--	0.055	U	0.063	U	0.07	U	0.097	U	0.14	U
Hexachlorobutadiene	87-68-3	--	0.0013	0.3	U	0.35	U	0.39	U	0.53	U	0.79	U
Hexachlorocyclopentadiene	77-47-4	--	--	1.7	U	1.9	U	2.1	U	2.9	U	4.3	U
Hexachloroethane	67-72-1	--	0.073	0.28	U	0.32	U	0.35	U	0.49	U	0.72	U
High Molecular Weight PAHs	SRP420	--	--	6.47		7.56		0.89		4.14		8.8	
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	--	0.26		0.29		0.035	U	0.19	J	0.33	J
Isophorone	78-59-1	--	--	0.14	U	0.16	U	0.18	U	0.24	U	0.36	U
Low Molecular Weight PAHs	SRP419	--	--	7.49		15.66		2.93		3.19		32.5	
2-Methylnaphthalene	91-57-6	0.07	0.67	2.3		6.7		1.5		0.48	J	17	
2-Methylphenol	95-48-7	--	--	0.14	U	0.16	U	0.18	U	0.24	U	0.36	U
3&4-Methylphenol	65794-96-9	--	--	ND		ND		ND		ND		ND	
4-Methylphenol	106-44-5	--	--	0.14	U	0.16	U	0.18	U	0.24	U	0.36	U
Naphthalene	91-20-3	0.16	2.1	0.055	U	0.063	U	0.24		0.097	U	5	
2-Nitroaniline	88-74-4	--	--	0.14	U	0.16	U	0.18	U	0.24	U	0.36	U
3-Nitroaniline	99-09-2	--	--	0.55	U	0.63	U	0.7	U	0.97	U	1.4	U
4-Nitroaniline	100-01-6	--	--	0.55	U	0.63	U	0.7	U	0.97	U	1.4	U
Nitrobenzene	98-95-3	--	--	0.22	U	0.25	U	0.28	U	0.39	U	0.58	U
2-Nitrophenol	88-75-5	--	--	0.22	U	0.25	U	0.28	U	0.39	U	0.58	U
4-Nitrophenol	100-02-7	--	--	1.4	U	1.6	U	1.8	U	2.4	U	3.6	U
n-Nitrosodi-n-propylamine	621-64-7	--	--	0.19	U	0.22	U	0.25	U	0.34	U	0.5	U
n-Nitrosodiphenylamine	86-30-6	--	--	0.14	U	0.16	U	0.18	U	0.24	U	0.36	U
p-Chloroaniline	106-47-8	--	--	0.28	U	0.32	U	0.35	U	0.49	U	0.72	U
p-Chloro-m-cresol	59-50-7	--	--	0.19	U	0.22	U	0.25	U	0.34	U	0.5	U
												1.6	U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-06-C/4.0-4.5	SED-06-C/4.0-4.5	SED-09-A(R)/3.0-	SED-09-B/5.0-5.5	SED-09-C(R)/4.5-	SED-19-B/0.0-0.5
(A)		(B)	3.5		5.0	
Date Sampled:	10/2/2019	10/2/2019	10/7/2019	10/7/2019	10/16/2019	9/20/2019
Depth (ft):	4-4.5	4-4.5	3-3.5	5-5.5	4.5-5	0-0.5
LAB Sample ID:	1165582	1165583	1169339	1169336	1176387	1156543
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M													
Pentachlorophenol	87-86-5	--	0.017	0.55	U	0.63	U	0.7	U	0.97	U	1.4	U	4.7	U	
Phenanthrene	85-01-8	0.24		1.5	2.5		4.4		0.56		1.1		6.1		0.97	J
Phenol	108-95-2	--	0.13	0.14	U	0.16	U	0.18	U	0.24	U	0.36	U	1.2	U	
Pyrene	129-00-0	0.665		2.6		2		2.3		0.35		1.1		2.4		3.7
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	0.14	U	0.16	U	0.18	U	0.24	U	0.36	U	1.2	U	
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	0.55	U	0.63	U	0.7	U	0.97	U	1.4	U	4.7	U	
Total PAHs	130498-29-2	4	45	13.96		23.22		3.82		7.33		41.3		20.84		
2,4,5-Trichlorophenol	95-95-4	--	0.003	0.25	U	0.29	U	0.32	U	0.44	U	0.65	U	2.1	U	
2,4,6-Trichlorophenol	88-06-2	--	0.006	0.22	U	0.25	U	0.28	U	0.39	U	0.58	U	1.9	U	
Total SVOC TIC	SRP171	--	--	120	J	140	J	94	J	85	J	520	J	200	J	
Total VOC and SVOC TICs	SRP351	--	--	260		350		274		134		780		NA		

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-19-C/0.0-0.5	SED-22-A/0.0-0.5	SED-22-A/2.0-2.5	SED-22-B/0.0-0.5	SED-22-B/9.0-9.5	SED-22-C/0.0-0.5
Date Sampled:	9/20/2019	9/25/2019	9/25/2019	9/25/2019	9/25/2019	9/26/2019
Depth (ft):	0-0.5	0-0.5	2-2.5	0-0.5	9-9.5	0-0.5
LAB Sample ID:	1156542	1159737	1159739	1159740	1159742	1160981

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M											
Acenaphthene	83-32-9	0.016	0.5	0.26	U	0.008	J	0.007	U	0.076	U	0.036	U	0.009 U
Acenaphthylene	208-96-8	0.044	0.64	0.26	U	0.008	U	0.007	U	0.076	U	0.036	U	0.009 U
Acetophenone	98-86-2	--	--	1.3	U	0.038	U	0.037	U	0.38	U	0.18	U	0.044 U
Anthracene	120-12-7	0.085	1.1	0.26	U	0.008	U	0.007	U	0.72	U	0.41	U	0.066
Atrazine	1912-24-9	--	--	16	U	0.45	U	0.44	U	4.6	U	2.1	U	0.53 U
Benzaldehyde	100-52-7	--	--	5.2	U	0.15	U	0.15	U	1.5	U	0.71	U	0.18 U
Benzo(a)pyrene	50-32-8	0.43	1.6	0.26	U	0.008	U	0.007	U	0.96	U	0.29	U	0.07
Benzo(a)anthracene	56-55-3	0.261	1.6	0.75	J	0.015	U	0.015	U	1.4	U	0.49	U	0.11
Benzo(b)fluoranthene	205-99-2	--	1.8	0.93	J	0.011	J	0.007	U	1.5	U	0.58	U	0.099
Benzo(g,h,i)perylene	191-24-2	0.17	--	0.26	U	0.008	U	0.007	U	0.89	U	0.22	U	0.084
Benzo(k)fluoranthene	207-08-9	0.24	--	0.26	U	0.008	U	0.007	U	0.45	U	0.18	U	0.031 J
1,1-Biphenyl	92-52-4	--	--	1.3	U	0.038	U	0.037	U	0.38	U	0.18	U	0.044 U
Bis(2-Chloroethoxy)methane	111-91-1	--	--	1.3	U	0.038	U	0.037	U	0.38	U	0.18	U	0.044 U
bis(2-Chloroethyl)ether	111-44-4	--	--	1.8	U	0.053	U	0.052	U	0.53	U	0.25	U	0.062 U
bis(2-Chloroisopropyl)ether	108-60-1	--	--	1.6	U	0.045	U	0.044	U	0.46	U	0.21	U	0.053 U
bis(2-Ethylhexyl)phthalate	117-81-7	0.18216	2.64651	5.2	U	0.15	U	0.15	U	48	U	0.71	U	3.9
4-Bromophenyl-phenylether	101-55-3	--	--	1.8	U	0.053	U	0.052	U	0.53	U	0.25	U	0.062 U
Butyl benzyl phthalate	85-68-7	--	0.063	5.2	U	0.15	U	0.15	U	1.5	U	0.71	U	0.18 U
Caprolactam	105-60-2	--	--	2.6	U	0.075	U	0.074	U	0.76	U	0.36	U	0.088 U
Carbazole	86-74-8	--	--	1.3	U	0.038	U	0.037	U	0.38	U	0.18	U	0.044 U
2-Chloronaphthalene	91-58-7	--	--	0.52	U	0.015	U	0.015	U	0.15	U	0.071	U	0.018 U
2-Chlorophenol	95-57-8	--	0.008	1.3	U	0.038	U	0.037	U	0.38	U	0.18	U	0.044 U
4-Chlorophenyl-phenylether	7005-72-3	--	--	1.6	U	0.045	U	0.044	U	0.46	U	0.21	U	0.053 U
Chrysene	218-01-9	0.384	2.8	0.8	J	0.009	J	0.007	U	1.9	U	0.82	U	0.15
Dibenz(a,h)anthracene	53-70-3	0.063	0.26	0.52	U	0.015	U	0.015	U	0.15	J	0.071	U	0.018 U
Dibenzofuran	132-64-9	--	--	1.3	U	0.038	U	0.037	U	0.38	U	0.18	U	0.044 U
3,3'-Dichlorobenzidine	91-94-1	--	--	7.9	U	0.23	U	0.22	U	2.3	U	1.1	U	0.26 U
2,4-Dichlorophenol	120-83-2	--	0.005	1.6	U	0.045	U	0.044	U	0.46	U	0.21	U	0.053 U
Diethyl phthalate	84-66-2	--	0.006	5.2	U	0.15	U	0.15	U	1.5	U	0.71	U	0.18 U
2,4-Dimethyl phenol	105-67-9	--	--	2.4	U	0.068	U	0.067	U	0.68	U	0.32	U	0.079 U
Dimethyl phthalate	131-11-3	--	--	5.2	U	0.15	U	0.15	U	1.5	U	0.71	U	0.18 U
Di-n-butyl phthalate	84-74-2	--	0.058	5.2	U	0.15	U	0.15	U	1.5	U	0.71	U	0.18 U
4,6-Dinitro-2-methylphenol	534-52-1	--	--	18	U	0.53	U	0.52	U	5.3	U	2.5	U	0.62 U

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ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-19-C/0.0-0.5	SED-22-A/0.0-0.5	SED-22-A/2.0-2.5	SED-22-B/0.0-0.5	SED-22-B/9.0-9.5	SED-22-C/0.0-0.5
Date Sampled:	9/20/2019	9/25/2019	9/25/2019	9/25/2019	9/25/2019	9/26/2019
Depth (ft):	0-0.5	0-0.5	2-2.5	0-0.5	9-9.5	0-0.5
LAB Sample ID:	1156542	1159737	1159739	1159740	1159742	1160981

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Eurofins Eurofins Eurofins Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M												
2,4-Dinitrophenol	51-28-5	--	--	26	U	0.75	U	0.74	U	7.6	U	3.6	U	0.88	U
Dinitrotoluene (2,4-2,6- mixture)	25321-14-6	--	--	ND		ND		ND		ND		ND		ND	
2,4-Dinitrotoluene	121-14-2	--	--	5.2	U	0.15	U	0.15	U	1.5	U	0.71	U	0.18	U
2,6-Dinitrotoluene	606-20-2	--	--	1.8	U	0.053	U	0.052	U	0.53	U	0.25	U	0.062	U
Di-n-octyl phthalate	117-84-0	--	--	5.2	U	0.15	U	0.15	U	1.5	U	0.71	U	0.18	U
1,4-Dioxane	123-91-1	--	--	7.9	U	0.23	U	0.22	U	2.3	U	1.1	U	0.26	U
Fluoranthene	206-44-0	0.6	5.1	1.1	J	0.013	J	0.011	J	2.5		1.1		0.19	
Fluorene	86-73-7	0.019	0.54	0.26	U	0.008	J	0.007	U	0.076	U	0.67		0.009	U
Hexachlorobenzene	118-74-1	0.02	--	0.52	U	0.015	U	0.015	U	0.15	U	0.071	U	0.018	U
Hexachlorobutadiene	87-68-3	--	0.0013	2.9	U	0.083	U	0.081	U	0.84	U	0.39	U	0.097	U
Hexachlorocyclopentadiene	77-47-4	--	--	16	U	0.45	U	0.44	U	4.6	U	2.1	U	0.53	U
Hexachloroethane	67-72-1	--	0.073	2.6	U	0.075	U	0.074	U	0.76	U	0.36	U	0.088	U
High Molecular Weight PAHs	SRP420	--	--	3.88		0.041		0.008		11.4		4.31		0.824	
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	--	0.26	U	0.008	U	0.007	U	0.55		0.23		0.04	J
Isophorone	78-59-1	--	--	1.3	U	0.038	U	0.037	U	0.38	U	0.18	U	0.044	U
Low Molecular Weight PAHs	SRP419	--	--	1.1		0.102		0.501		4.14		6.61		0.291	
2-Methylnaphthalene	91-57-6	0.07	0.67	0.26	U	0.032	J	0.007	U	0.32	J	2.1		0.014	J
2-Methylphenol	95-48-7	--	--	1.3	U	0.038	U	0.037	U	0.38	U	0.18	U	0.044	U
3&4-Methylphenol	65794-96-9	--	--	ND		ND		ND		ND		ND		ND	
4-Methylphenol	106-44-5	--	--	1.3	U	0.038	U	0.037	U	0.38	U	0.18	U	0.044	U
Naphthalene	91-20-3	0.16	2.1	0.52	U	0.027	J	0.47		0.19	J	0.53		0.018	U
2-Nitroaniline	88-74-4	--	--	1.3	U	0.038	U	0.037	U	0.38	U	0.18	U	0.044	U
3-Nitroaniline	99-09-2	--	--	5.2	U	0.15	U	0.15	U	1.5	U	0.71	U	0.18	U
4-Nitroaniline	100-01-6	--	--	5.2	U	0.15	U	0.15	U	1.5	U	0.71	U	0.18	U
Nitrobenzene	98-95-3	--	--	2.1	U	0.06	U	0.059	U	0.61	U	0.29	U	0.071	U
2-Nitrophenol	88-75-5	--	--	2.1	U	0.06	U	0.059	U	0.61	U	0.29	U	0.071	U
4-Nitrophenol	100-02-7	--	--	13	U	0.38	U	0.37	U	3.8	U	1.8	U	0.44	U
n-Nitrosodi-n-propylamine	621-64-7	--	--	1.8	U	0.053	U	0.052	U	0.53	U	0.25	U	0.062	U
n-Nitrosodiphenylamine	86-30-6	--	--	1.3	U	0.038	U	0.037	U	0.38	U	0.18	U	0.044	U
p-Chloroaniline	106-47-8	--	--	2.6	U	0.075	U	0.074	U	0.76	U	0.36	U	0.088	U
p-Chloro-m-cresol	59-50-7	--	--	1.8	U	0.053	U	0.052	U	0.53	U	0.25	U	0.062	U
Pentachlorophenol	87-86-5	--	0.017	5.2	U	0.15	U	0.15	U	1.5	U	0.71	U	0.18	U
Phenanthrene	85-01-8	0.24	1.5	0.26	U	0.014	J	0.02	J	0.41		1.8		0.021	J

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ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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Underline indicates concentrations above the ESC ER-M

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NA = Not Analyzed

J = Estimated value below sample reporting limit

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U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-19-C/0.0-0.5	SED-22-A/0.0-0.5	SED-22-A/2.0-2.5	SED-22-B/0.0-0.5	SED-22-B/9.0-9.5	SED-22-C/0.0-0.5
Date Sampled:	9/20/2019	9/25/2019	9/25/2019	9/25/2019	9/25/2019	9/26/2019
Depth (ft):	0-0.5	0-0.5	2-2.5	0-0.5	9-9.5	0-0.5
LAB Sample ID:	1156542	1159737	1159739	1159740	1159742	1160981

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M										
Phenol	108-95-2	--	0.13	1.3	U	0.038	U	0.037	U	0.38	U	0.18	U
Pyrene	129-00-0	0.665	2.6	1.4		0.021	J	0.008	J	3.6		1.5	
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	1.3	U	0.038	U	0.037	U	0.38	U	0.18	U
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	5.2	U	0.15	U	0.15	U	1.5	U	0.71	U
Total PAHs	130498-29-2	4	45	4.98		0.143		0.509		15.54		10.92	
2,4,5-Trichlorophenol	95-95-4	--	0.003	2.4	U	0.068	U	0.067	U	0.68	U	0.32	U
2,4,6-Trichlorophenol	88-06-2	--	0.006	2.1	U	0.06	U	0.059	U	0.61	U	0.29	U
Total SVOC TIC	SRP171	--	--	150	JB	26	JB	79	JB	240	J	190	J
Total VOC and SVOC TICs	SRP351	--	--	NA		NA		79		NA		310	

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ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.: SED-22-C/4.5-5.0 SED-23-A/0.0-0.5 SED-23-A/2.0-2.5 SED-23-B/0.0-0.5 SED-23-B/6.5-7.0 SED-23-C/0.0-0.5
Date Sampled: 9/26/2019 10/2/2019 10/2/2019 10/2/2019 10/2/2019 10/2/2019
Depth (ft): 4.5-5 0-0.5 2-2.5 0-0.5 6.5-7 0-0.5
LAB Sample ID: 1160983 1165596 1165598 1165590 1165592 1165593
LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M												
Acenaphthene	83-32-9	0.016	0.5	0.007	U	0.036	U	1.2	0.013	J	0.036	U	0.084		
Acenaphthylene	208-96-8	0.044	0.64	0.007	U	0.036	U	0.039	U	0.014	J	0.036	U	0.01	J
Acetophenone	98-86-2	--	--	0.036	U	0.18	U	0.19	U	0.022	U	0.18	U	0.02	U
Anthracene	120-12-7	0.085	1.1	0.48		0.3		0.89		0.067		0.36		0.35	
Atrazine	1912-24-9	--	--	0.43	U	2.2	U	2.3	U	0.26	U	2.2	U	0.24	U
Benzaldehyde	100-52-7	--	--	0.14	U	0.72	U	0.78	U	0.086	U	0.73	U	0.08	U
Benzo(a)pyrene	50-32-8	0.43	1.6	0.24		0.23		0.46		0.4		0.28		0.44	
Benzo(a)anthracene	56-55-3	0.261	1.6	0.31		0.32		0.72		0.36		0.39		0.63	
Benzo(b)fluoranthene	205-99-2	--	1.8	0.29		0.28		0.64		0.56		0.39		0.6	
Benzo(g,h,i)perylene	191-24-2	0.17	--	0.2		0.16	J	0.34		0.35		0.2		0.28	
Benzo(k)fluoranthene	207-08-9	0.24	--	0.12		0.1	J	0.17	J	0.19		0.15	J	0.22	
1,1-Biphenyl	92-52-4	--	--	0.036	U	0.18	U	0.19	U	0.022	U	0.18	U	0.02	U
Bis(2-Chloroethoxy)methane	111-91-1	--	--	0.036	U	0.18	U	0.19	U	0.022	U	0.18	U	0.02	U
bis(2-Chloroethyl)ether	111-44-4	--	--	0.05	U	0.25	U	0.27	U	0.03	U	0.26	U	0.028	U
bis(2-Chloroisopropyl)ether	108-60-1	--	--	0.043	U	0.22	U	0.23	U	0.026	U	0.22	U	0.024	U
bis(2-Ethylhexyl)phthalate	117-81-7	0.18216	2.64651	1.7		1.3	J	0.78	U	0.47		0.73	U	0.29	
4-Bromophenyl-phenylether	101-55-3	--	--	0.05	U	0.25	U	0.27	U	0.03	U	0.26	U	0.028	U
Butyl benzyl phthalate	85-68-7	--	0.063	0.14	U	0.72	U	0.78	U	0.086	U	0.73	U	0.08	U
Caprolactam	105-60-2	--	--	0.071	U	0.36	U	0.39	U	0.043	U	0.36	U	0.04	U
Carbazole	86-74-8	--	--	0.036	U	0.18	U	0.19	U	0.032	J	0.18	U	0.13	
2-Chloronaphthalene	91-58-7	--	--	0.014	U	0.072	U	0.078	U	0.009	U	0.073	U	0.008	U
2-Chlorophenol	95-57-8	--	0.008	0.036	U	0.18	U	0.19	U	0.022	U	0.18	U	0.02	U
4-Chlorophenyl-phenylether	7005-72-3	--	--	0.043	U	0.22	U	0.23	U	0.026	U	0.22	U	0.024	U
Chrysene	218-01-9	0.384	2.8	0.46		0.4		1		0.38		0.45		0.48	
Dibenz(a,h)anthracene	53-70-3	0.063	0.26	0.034	J	0.072	U	0.083	J	0.071		0.073	U	0.07	
Dibenzofuran	132-64-9	--	--	0.036	U	0.32	J	0.92		0.022	U	0.18	U	0.069	
3,3'-Dichlorobenzidine	91-94-1	--	--	0.21	U	1.1	U	1.2	U	0.13	U	1.1	U	0.12	
2,4-Dichlorophenol	120-83-2	--	0.005	0.043	U	0.22	U	0.23	U	0.026	U	0.22	U	0.024	U
Diethyl phthalate	84-66-2	--	0.006	0.14	U	0.72	U	0.78	U	0.086	U	0.73	U	0.08	U
2,4-Dimethyl phenol	105-67-9	--	--	0.064	U	0.32	U	0.35	U	0.039	U	0.33	U	0.036	U
Dimethyl phthalate	131-11-3	--	--	0.14	U	0.72	U	0.78	U	0.086	U	0.73	U	0.08	U
Di-n-butyl phthalate	84-74-2	--	0.058	0.14	U	0.72	U	0.78	U	0.086	U	0.73	U	0.08	U
4,6-Dinitro-2-methylphenol	534-52-1	--	--	0.5	U	2.5	U	2.7	U	0.3	U	2.6	U	0.28	U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.: SED-22-C/4.5-5.0 SED-23-A/0.0-0.5 SED-23-A/2.0-2.5 SED-23-B/0.0-0.5 SED-23-B/6.5-7.0 SED-23-C/0.0-0.5
Date Sampled: 9/26/2019 10/2/2019 10/2/2019 10/2/2019 10/2/2019 10/2/2019
Depth (ft): 4.5-5 0-0.5 2-2.5 0-0.5 6.5-7 0-0.5
LAB Sample ID: 1160983 1165596 1165598 1165590 1165592 1165593
LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M												
2,4-Dinitrophenol	51-28-5	--	--	0.71	U	3.6	U	3.9	U	0.43	U	3.6	U	0.4	U
Dinitrotoluene (2,4-2,6- mixture)	25321-14-6	--	--	ND											
2,4-Dinitrotoluene	121-14-2	--	--	0.14	U	0.72	U	0.78	U	0.086	U	0.73	U	0.08	U
2,6-Dinitrotoluene	606-20-2	--	--	0.05	U	0.25	U	0.27	U	0.03	U	0.26	U	0.028	U
Di-n-octyl phthalate	117-84-0	--	--	0.14	U	0.72	U	0.78	U	0.086	U	0.73	U	0.08	U
1,4-Dioxane	123-91-1	--	--	0.21	U	1.1	U	1.2	U	0.13	U	1.1	U	0.12	U
Fluoranthene	206-44-0	0.6	5.1	0.87		0.71		1.6		0.68		0.73		1.1	
Fluorene	86-73-7	0.019	0.54	0.76		0.65		1.5		0.017	J	0.43		0.12	
Hexachlorobenzene	118-74-1	0.02	--	0.014	U	0.072	U	0.078	U	0.009	U	0.073	U	0.008	U
Hexachlorobutadiene	87-68-3	--	0.0013	0.078	U	0.4	U	0.43	U	0.047	U	0.4	U	0.044	U
Hexachlorocyclopentadiene	77-47-4	--	--	0.43	U	2.2	U	2.3	U	0.26	U	2.2	U	0.24	U
Hexachloroethane	67-72-1	--	0.073	0.071	U	0.36	U	0.39	U	0.043	U	0.36	U	0.04	U
High Molecular Weight PAHs	SRP420	--	--	2.664		2.61		6.143		3.141		2.96		3.88	
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	--	0.13		0.14	J	0.23		0.25		0.16	J	0.24	
Isophorone	78-59-1	--	--	0.036	U	0.18	U	0.19	U	0.022	U	0.18	U	0.02	U
Low Molecular Weight PAHs	SRP419	--	--	6.7		3.67		13.27		1.074		4.16		2.684	
2-Methylnaphthalene	91-57-6	0.07	0.67	2.4		0.28	J	4.1		0.012	J	1.4		0.017	J
2-Methylphenol	95-48-7	--	--	0.036	U	0.18	U	0.19	U	0.022	U	0.18	U	0.02	U
3&4-Methylphenol	65794-96-9	--	--	ND											
4-Methylphenol	106-44-5	--	--	0.036	U	0.18	U	0.19	U	0.022	U	0.18	U	0.02	U
Naphthalene	91-20-3	0.16	2.1	0.49		0.13	J	0.38		0.011	J	0.14	J	0.013	J
2-Nitroaniline	88-74-4	--	--	0.036	U	0.18	U	0.19	U	0.022	U	0.18	U	0.02	U
3-Nitroaniline	99-09-2	--	--	0.14	U	0.72	U	0.78	U	0.086	U	0.73	U	0.08	U
4-Nitroaniline	100-01-6	--	--	0.14	U	0.72	U	0.78	U	0.086	U	0.73	U	0.08	U
Nitrobenzene	98-95-3	--	--	0.057	U	0.29	U	0.31	U	0.034	U	0.29	U	0.032	U
2-Nitrophenol	88-75-5	--	--	0.057	U	0.29	U	0.31	U	0.034	U	0.29	U	0.032	U
4-Nitrophenol	100-02-7	--	--	0.36	U	1.8	U	1.9	U	0.22	U	1.8	U	0.2	U
n-Nitrosodi-n-propylamine	621-64-7	--	--	0.05	U	0.25	U	0.27	U	0.03	U	0.26	U	0.028	U
n-Nitrosodiphenylamine	86-30-6	--	--	0.036	U	0.18	U	0.19	U	0.022	U	0.18	U	0.02	U
p-Chloroaniline	106-47-8	--	--	0.071	U	0.36	U	0.39	U	0.043	U	0.36	U	0.04	U
p-Chloro-m-cresol	59-50-7	--	--	0.05	U	0.25	U	0.27	U	0.03	U	0.26	U	0.028	U
Pentachlorophenol	87-86-5	--	0.017	0.14	U	0.72	U	0.78	U	0.086	U	0.73	U	0.08	U
Phenanthrene	85-01-8	0.24	1.5	1.7		1.6		3.6		0.26		1.1		0.99	

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NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-22-C/4.5-5.0	SED-23-A/0.0-0.5	SED-23-A/2.0-2.5	SED-23-B/0.0-0.5	SED-23-B/6.5-7.0	SED-23-C/0.0-0.5
Date Sampled:	9/26/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019
Depth (ft):	4.5-5	0-0.5	2-2.5	0-0.5	6.5-7	0-0.5
LAB Sample ID:	1160983	1165596	1165598	1165590	1165592	1165593

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M										
Phenol	108-95-2	--	0.13	0.036	U	0.18	U	0.19	U	0.022	U	0.18	U
Pyrene	129-00-0	0.665	2.6	0.88		0.98		2.5		0.58		0.94	
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	0.036	U	0.18	U	0.19	U	0.022	U	0.18	U
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	0.14	U	0.72	U	0.78	U	0.086	U	0.73	U
Total PAHs	130498-29-2	4	45	9.364		6.28		19.413		4.215		7.12	
2,4,5-Trichlorophenol	95-95-4	--	0.003	0.064	U	0.32	U	0.35	U	0.039	U	0.33	U
2,4,6-Trichlorophenol	88-06-2	--	0.006	0.057	U	0.29	U	0.31	U	0.034	U	0.29	U
Total SVOC TIC	SRP171	--	--	35	J	220	J	250	J	9.4	J	110	J
Total VOC and SVOC TICs	SRP351	--	--	134		NA		390		NA		195	

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J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-23-C/5.5-6.0	SED-24-A/0.0-0.5	SED-24-A/5.5-6.0	SED-24-A/5.5-6.0	SED-24-B/0.0-0.5	SED-24-B/2.0-2.5
(A)			(B)			
Date Sampled:	10/2/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019
Depth (ft):	5.5-6	0-0.5	5.5-6	5.5-6	0-0.5	2-2.5
LAB Sample ID:	1165595	1167968	1167970	1167971	1167972	1167974
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M									
Acenaphthene	83-32-9	0.016	0.5	0.032	U	0.091	J	1.7	1	0.022	U	0.041 J
Acenaphthylene	208-96-8	0.044	0.64	0.032	U	0.11		0.036	U	0.032	U	0.042
Acetophenone	98-86-2	--	--	0.16	U	0.097	U	0.18	U	0.16	U	0.11 U
Anthracene	120-12-7	0.085	1.1	0.19		0.26		1.7	1	0.13		0.14
Atrazine	1912-24-9	--	--	1.9	U	1.2	U	2.2	U	1.9	U	1.3 U
Benzaldehyde	100-52-7	--	--	0.63	U	0.39	U	0.72	U	0.63	U	0.45 U
Benzo(a)pyrene	50-32-8	0.43	1.6	0.18		1.3		1.2		0.69		0.54
Benzo(a)anthracene	56-55-3	0.261	1.6	0.25		1.3		1.8		1.2		0.49
Benzo(b)fluoranthene	205-99-2	--	1.8	0.29		1.8		1.2		0.7		0.66
Benzo(ghi)perylene	191-24-2	0.17	--	0.15	J	1.1		1.2		0.79		0.4
Benzo(k)fluoranthene	207-08-9	0.24	--	0.093	J	0.59		0.42		0.22		0.26
1,1-Biphenyl	92-52-4	--	--	0.16	U	0.097	U	0.18	U	0.16	U	0.11 U
Bis(2-Chloroethoxy)methane	111-91-1	--	--	0.16	U	0.097	U	0.18	U	0.16	U	0.11 U
bis(2-Chloroethyl)ether	111-44-4	--	--	0.22	U	0.14	U	0.25	U	0.22	U	0.16 U
bis(2-Chloroisopropyl)ether	108-60-1	--	--	0.19	U	0.12	U	0.22	U	0.19	U	0.13 U
bis(2-Ethylhexyl)phthalate	117-81-7	0.18216	2.64651	1	J	6		10		6.1		0.45 U
4-Bromophenyl-phenylether	101-55-3	--	--	0.22	U	0.14	U	0.25	U	0.22	U	0.16 U
Butyl benzyl phthalate	85-68-7	--	0.063	0.63	U	0.39	U	0.72	U	0.63	U	0.45 U
Caprolactam	105-60-2	--	--	0.32	U	0.19	U	0.36	U	0.32	U	0.22 U
Carbazole	86-74-8	--	--	0.16	U	0.14	J	0.18	U	0.16	U	0.11 U
2-Chloronaphthalene	91-58-7	--	--	0.063	U	0.039	U	0.072	U	0.063	U	0.045 U
2-Chlorophenol	95-57-8	--	0.008	0.16	U	0.097	U	0.18	U	0.16	U	0.11 U
4-Chlorophenyl-phenylether	7005-72-3	--	--	0.19	U	0.12	U	0.22	U	0.19	U	0.13 U
Chrysene	218-01-9	0.384	2.8	0.35		1		2.5		1.7		0.48
Dibenz(a,h)anthracene	53-70-3	0.063	0.26	0.063	U	0.2		0.28		0.15	J	0.045 U
Dibenzofuran	132-64-9	--	--	0.16	U	0.097	U	0.18	U	0.16	U	0.11 U
3,3'-Dichlorobenzidine	91-94-1	--	--	0.95	U	0.58	U	1.1	U	0.95	U	0.67 U
2,4-Dichlorophenol	120-83-2	--	0.005	0.19	U	0.12	U	0.22	U	0.19	U	0.13 U
Diethyl phthalate	84-66-2	--	0.006	0.63	U	0.39	U	0.72	U	0.63	U	0.45 U
2,4-Dimethyl phenol	105-67-9	--	--	0.28	U	0.17	U	0.32	U	0.28	U	0.2 U
Dimethyl phthalate	131-11-3	--	--	0.63	U	0.39	U	0.72	U	0.63	U	0.45 U
Di-n-butyl phthalate	84-74-2	--	0.058	0.63	U	0.39	U	0.72	U	0.63	U	0.45 U
												0.4 U

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ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-23-C/5.5-6.0	SED-24-A/0.0-0.5	SED-24-A/5.5-6.0	SED-24-A/5.5-6.0	SED-24-B/0.0-0.5	SED-24-B/2.0-2.5
(A)			(B)			
Date Sampled:	10/2/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019
Depth (ft):	5.5-6	0-0.5	5.5-6	5.5-6	0-0.5	2-2.5
LAB Sample ID:	1165595	1167968	1167970	1167971	1167972	1167974
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M																
4,6-Dinitro-2-methylphenol	534-52-1	--	--	2.2	U	1.4	U	2.5	U	2.2	U	1.6	U	1.4	U				
2,4-Dinitrophenol	51-28-5	--	--	3.2	U	1.9	U	3.6	U	3.2	U	2.2	U	2	U				
Dinitrotoluene (2,4-2,6- mixture)	25321-14-6	--	--	ND		ND		ND		ND		ND		ND					
2,4-Dinitrotoluene	121-14-2	--	--	0.63	U	0.39	U	0.72	U	0.63	U	0.45	U	0.4	U				
2,6-Dinitrotoluene	606-20-2	--	--	0.22	U	0.14	U	0.25	U	0.22	U	0.16	U	0.14	U				
Di-n-octyl phthalate	117-84-0	--	--	0.63	U	0.39	U	0.72	U	0.63	U	0.45	U	0.4	U				
1,4-Dioxane	123-91-1	--	--	0.95	U	0.58	U	1.1	U	0.95	U	0.67	U	0.6	U				
Fluoranthene	206-44-0	0.6	5.1	0.53		2.2		2.7		1.4		0.84		0.9					
Fluorene	86-73-7	0.019	0.54	0.34		0.099		3		1.6		0.071	J	0.02	U				
Hexachlorobenzene	118-74-1	0.02	--	0.063	U	0.039	U	0.072	U	0.063	U	0.045	U	0.04	U				
Hexachlorobutadiene	87-68-3	--	0.0013	0.35	U	0.21	U	0.4	U	0.35	U	0.25	U	0.22	U				
Hexachlorocyclopentadiene	77-47-4	--	--	1.9	U	1.2	U	2.2	U	1.9	U	1.3	U	1.2	U				
Hexachloroethane	67-72-1	--	0.073	0.32	U	0.19	U	0.36	U	0.32	U	0.22	U	0.2	U				
High Molecular Weight PAHs	SRP420	--	--	2.123		10.28		13.54		8.57		4.01		4.58					
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	--	0.11	J	0.79		0.54		0.32		0.37		0.37					
Isophorone	78-59-1	--	--	0.16	U	0.097	U	0.18	U	0.16	U	0.11	U	0.1	U				
Low Molecular Weight PAHs	SRP419	--	--	3.82		3.66		47.6		27		1.571		1.543					
2-Methylnaphthalene	91-57-6	0.07	0.67	1.7		0.11	J	24		14		0.022	U	0.02	U				
2-Methylphenol	95-48-7	--	--	0.16	U	0.097	U	0.18	U	0.16	U	0.11	U	0.1	U				
3&4-Methylphenol	65794-96-9	--	--	ND		0.23		ND		ND		ND		ND					
4-Methylphenol	106-44-5	--	--	0.16	U	0.23	J	0.18	U	0.16	U	0.11	U	0.1	U				
Naphthalene	91-20-3	0.16	2.1	0.29		0.17		6.3		3.5		0.045	U	0.04	U				
2-Nitroaniline	88-74-4	--	--	0.16	U	0.097	U	0.18	U	0.16	U	0.11	U	0.1	U				
3-Nitroaniline	99-09-2	--	--	0.63	U	0.39	U	0.72	U	0.63	U	0.45	U	0.4	U				
4-Nitroaniline	100-01-6	--	--	0.63	U	0.39	U	0.72	U	0.63	U	0.45	U	0.4	U				
Nitrobenzene	98-95-3	--	--	0.25	U	0.15	U	0.29	U	0.25	U	0.18	U	0.16	U				
2-Nitrophenol	88-75-5	--	--	0.25	U	0.15	U	0.29	U	0.25	U	0.18	U	0.16	U				
4-Nitrophenol	100-02-7	--	--	1.6	U	0.97	U	1.8	U	1.6	U	1.1	U	1	U				
n-Nitrosodi-n-propylamine	621-64-7	--	--	0.22	U	0.14	U	0.25	U	0.22	U	0.16	U	0.14	U				
n-Nitrosodiphenylamine	86-30-6	--	--	0.16	U	0.097	U	0.18	U	0.16	U	0.11	U	0.1	U				
p-Chloroaniline	106-47-8	--	--	0.32	U	0.19	U	0.36	U	0.32	U	0.22	U	0.2	U				
p-Chloro-m-cresol	59-50-7	--	--	0.22	U	0.14	U	0.25	U	0.22	U	0.16	U	0.14	U				

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ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-23-C/5.5-6.0	SED-24-A/0.0-0.5	SED-24-A/5.5-6.0	SED-24-A/5.5-6.0	SED-24-B/0.0-0.5	SED-24-B/2.0-2.5
(A)			(B)			
Date Sampled:	10/2/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019
Depth (ft):	5.5-6	0-0.5	5.5-6	5.5-6	0-0.5	2-2.5
LAB Sample ID:	1165595	1167968	1167970	1167971	1167972	1167974
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M												
Pentachlorophenol	87-86-5	--	0.017	0.63	U	0.39	U	0.72	U	0.63	U	0.45	U	0.4	U
Phenanthrene	85-01-8	0.24		1.5	0.77		0.62		8.2		4.5		0.53		0.42
Phenol	108-95-2	--	0.13	0.16	U	0.097	U	0.18	U	0.16	U	0.11	U	0.1	U
Pyrene	129-00-0	0.665		2.6	0.7		2.2		4.4		2.8		0.81		0.97
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	0.16	U	0.097	U	0.18	U	0.16	U	0.11	U	0.1	U
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	0.63	U	0.39	U	0.72	U	0.63	U	0.45	U	0.4	U
Total PAHs	130498-29-2	4	45	5.943		13.94		61.14		35.57		5.581		6.123	
2,4,5-Trichlorophenol	95-95-4	--	0.003	0.28	U	0.17	U	0.32	U	0.28	U	0.2	U	0.18	U
2,4,6-Trichlorophenol	88-06-2	--	0.006	0.25	U	0.15	U	0.29	U	0.25	U	0.18	U	0.16	U
Total SVOC TIC	SRP171	--	--	110	J	NA		NA		NA		NA		NA	
Total VOC and SVOC TICs	SRP351	--	--	240		NA		NA		NA		NA		NA	

ESC = NJDEP Ecological Screening Criteria, March 2009

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ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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MDL = Method Detection Limit

U = Compound not detected above MDL

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Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-24-C/0.0-0.5	SED-24-C/2.0-2.5	SED-25-A/0.0-0.5	SED-25-B/0.0-0.5	SED-25-C/0.0-0.5
Date Sampled:	10/4/2019	10/4/2019	10/25/2019	10/24/2019	10/24/2019
Depth (ft):	0-0.5	2-2.5	0-0.5	0-0.5	0-0.5
LAB Sample ID:	1167975	1167977	1184595	1183319	1183317

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M							
Acenaphthene	83-32-9	0.016	0.5	0.031	U	0.026	U	0.093	J	
Acenaphthylene	208-96-8	0.044	0.64	0.031	U	0.026	U	0.03	J	
Acetophenone	98-86-2	--	--	0.16	U	0.13	U	0.14	U	
Anthracene	120-12-7	0.085	1.1	0.031	U	0.62	0.35	0.48	0.16	
Atrazine	1912-24-9	--	--	1.9	U	1.6	U	1.7	U	
Benzaldehyde	100-52-7	--	--	0.62	U	0.52	U	0.56	U	
Benzo(a)pyrene	50-32-8	0.43	1.6	0.39		0.66	0.67	1	1.1	
Benzo(a)anthracene	56-55-3	0.261	1.6	0.38		0.64	0.76	1	1.1	
Benzo(b)fluoranthene	205-99-2	--	--	1.8	0.35	0.6	0.89	1.2	1.8	
Benzo(g,h,i)perylene	191-24-2	0.17	--	0.41		0.76	0.54	0.96	0.95	
Benzo(k)fluoranthene	207-08-9	0.24	--	0.031	U	0.026	U	0.39	0.42	
1,1-Biphenyl	92-52-4	--	--	0.16	U	0.13	U	0.14	U	
Bis(2-Chloroethoxy)methane	111-91-1	--	--	0.16	U	0.13	U	0.14	U	
bis(2-Chloroethyl)ether	111-44-4	--	--	0.22	U	0.18	U	0.2	U	
bis(2-Chloroisopropyl)ether	108-60-1	--	--	0.19	U	0.16	U	0.17	U	
bis(2-Ethylhexyl)phthalate	117-81-7	0.18216	2.64651	3.5		4.6	0.68	J	0.45	
4-Bromophenyl-phenylether	101-55-3	--	--	0.22	U	0.18	U	0.2	U	
Butyl benzyl phthalate	85-68-7	--	0.063	0.62	U	0.52	U	0.56	U	
Caprolactam	105-60-2	--	--	0.31	U	0.26	U	0.28	U	
Carbazole	86-74-8	--	--	0.16	U	0.13	U	0.14	U	
2-Chloronaphthalene	91-58-7	--	--	0.062	U	0.052	U	0.056	U	
2-Chlorophenol	95-57-8	--	0.008	0.16	U	0.13	U	0.14	U	
4-Chlorophenyl-phenylether	7005-72-3	--	--	0.19	U	0.16	U	0.17	U	
Chrysene	218-01-9	0.384	2.8	0.73		1.2	0.68	1.1	1.3	
Dibenz(a,h)anthracene	53-70-3	0.063	0.26	0.062	U	0.052	U	0.12	J	
Dibenzofuran	132-64-9	--	--	0.16	U	0.13	U	0.14	U	
3,3'-Dichlorobenzidine	91-94-1	--	--	0.93	U	0.78	U	0.84	U	
2,4-Dichlorophenol	120-83-2	--	0.005	0.19	U	0.16	U	0.17	U	
Diethyl phthalate	84-66-2	--	0.006	0.62	U	0.52	U	0.56	U	
2,4-Dimethyl phenol	105-67-9	--	--	0.28	U	0.23	U	0.25	U	
Dimethyl phthalate	131-11-3	--	--	0.62	U	0.52	U	0.56	U	
Di-n-butyl phthalate	84-74-2	--	0.058	0.62	U	0.52	U	0.56	U	
4,6-Dinitro-2-methylphenol	534-52-1	--	--	2.2	U	1.8	U	2	U	
								1.6	U	
									2.2	U

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ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

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ND = Not Detected

NA = Not Analyzed

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Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.: SED-24-C/0.0-0.5 SED-24-C/2.0-2.5 SED-25-A/0.0-0.5 SED-25-B/0.0-0.5 SED-25-C/0.0-0.5
Date Sampled: 10/4/2019 10/4/2019 10/25/2019 10/24/2019 10/24/2019
Depth (ft): 0-0.5 2-2.5 0-0.5 0-0.5 0-0.5
LAB Sample ID: 1167975 1167977 1184595 1183319 1183317
LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
2,4-Dinitrophenol	51-28-5	--	--	3.1	U	2.6	U	2.8	U	2.3	U
Dinitrotoluene (2,4-2,6- mixture)	25321-14-6	--	--	ND		ND		ND		ND	
2,4-Dinitrotoluene	121-14-2	--	--	0.62	U	0.52	U	0.56	U	0.45	U
2,6-Dinitrotoluene	606-20-2	--	--	0.22	U	0.18	U	0.2	U	0.16	U
Di-n-octyl phthalate	117-84-0	--	--	0.62	U	0.52	U	0.56	U	0.45	U
1,4-Dioxane	123-91-1	--	--	0.93	U	0.78	U	0.84	U	0.68	U
Fluoranthene	206-44-0	0.6	5.1	0.55		0.97		1.5		2.3	
Fluorene	86-73-7	0.019	0.54	0.031	U	0.026	U	0.17		0.16	
Hexachlorobenzene	118-74-1	0.02	--	0.062	U	0.052	U	0.056	U	0.045	U
Hexachlorobutadiene	87-68-3	--	0.0013	0.34	U	0.29	U	0.31	U	0.25	U
Hexachlorocyclopentadiene	77-47-4	--	--	1.9	U	1.6	U	1.7	U	1.4	U
Hexachloroethane	67-72-1	--	0.073	0.31	U	0.26	U	0.28	U	0.23	U
High Molecular Weight PAHs	SRP420	--	--	3.46		5.66		5.87		8.65	
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	--	0.031	U	0.026	U	0.42		0.59	
Isophorone	78-59-1	--	--	0.16	U	0.13	U	0.14	U	0.11	U
Low Molecular Weight PAHs	SRP419	--	--	1.85		7.49		3.214		5.15	
2-Methylnaphthalene	91-57-6	0.07	0.67	0.031	U	3.3		0.062	J	0.14	J
2-Methylphenol	95-48-7	--	--	0.16	U	0.13	U	0.14	U	0.11	U
3&4-Methylphenol	65794-96-9	--	--	ND		ND		ND		ND	
4-Methylphenol	106-44-5	--	--	0.16	U	0.13	U	0.14	U	0.11	U
Naphthalene	91-20-3	0.16	2.1	0.062	U	0.052	U	0.059	J	0.16	0.062
2-Nitroaniline	88-74-4	--	--	0.16	U	0.13	U	0.14	U	0.11	U
3-Nitroaniline	99-09-2	--	--	0.62	U	0.52	U	0.56	U	0.45	U
4-Nitroaniline	100-01-6	--	--	0.62	U	0.52	U	0.56	U	0.45	U
Nitrobenzene	98-95-3	--	--	0.25	U	0.21	U	0.23	U	0.18	U
2-Nitrophenol	88-75-5	--	--	0.25	U	0.21	U	0.23	U	0.18	U
4-Nitrophenol	100-02-7	--	--	1.6	U	1.3	U	1.4	U	1.1	U
n-Nitrosodi-n-propylamine	621-64-7	--	--	0.22	U	0.18	U	0.2	U	0.16	U
n-Nitrosodiphenylamine	86-30-6	--	--	0.16	U	0.13	U	0.14	U	0.42	
p-Chloroaniline	106-47-8	--	--	0.31	U	0.26	U	0.28	U	0.23	U
p-Chloro-m-cresol	59-50-7	--	--	0.22	U	0.18	U	0.2	U	0.16	U
Pentachlorophenol	87-86-5	--	0.017	0.62	U	0.52	U	0.56	U	0.45	U
Phenanthrene	85-01-8	0.24	1.5	1.3		2.6		0.95	1.7	1.3	

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NA = Not Analyzed

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U = Compound not detected above MDL

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Table A-XI
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-24-C/0.0-0.5	SED-24-C/2.0-2.5	SED-25-A/0.0-0.5	SED-25-B/0.0-0.5	SED-25-C/0.0-0.5
Date Sampled:	10/4/2019	10/4/2019	10/25/2019	10/24/2019	10/24/2019
Depth (ft):	0-0.5	2-2.5	0-0.5	0-0.5	0-0.5
LAB Sample ID:	1167975	1167977	1184595	1183319	1183317

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
Phenol	108-95-2	--	0.13	0.16	U	0.13	U	0.14	U	0.16	J
Pyrene	129-00-0	0.665	2.6	1.2		1.8		1.4		2.2	
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	0.16	U	0.13	U	0.14	U	0.11	U
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	0.62	U	0.52	U	0.56	U	0.45	U
Total PAHs	130498-29-2	4	45	5.31		13.15		9.084		13.8	14.223
2,4,5-Trichlorophenol	95-95-4	--	0.003	0.28	U	0.23	U	0.25	U	0.2	U
2,4,6-Trichlorophenol	88-06-2	--	0.006	0.25	U	0.21	U	0.23	U	0.18	U
Total SVOC TIC	SRP171	--	--	NA		NA		19	JB	30	JB
Total VOC and SVOC TICs	SRP351	--	--	NA		NA		NA		NA	

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Table A-XII
Summary of Metals in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-01-A/2.0-2.5	SED-01-B/2.0-2.5	SED-01-C/2.0-2.5	SED-02-A(R)/0.0-	SED-02-A(R)/6.0-	SED-02-B(R)/0.0-
				0.5	6.5	0.5(A)
Date Sampled:	9/23/2019	9/25/2019	9/23/2019	9/27/2019	9/27/2019	9/27/2019
Depth (ft):	2-2.5	2-2.5	2-2.5	0-0.5	6-6.5	0-0.5
LAB Sample ID:	1157567	1159745	1157564	1162106	1162108	1162109
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster
	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M							
Aluminum	7429-90-5	--	18000	31400	17200	29600	5980	21200	8020	
Antimony	7440-36-0	--	9.3	12.6	U	4.61	J	2.42	U	12.5
Arsenic	7440-38-2	8.2	70	23.4		28.4		20.8		101
Barium	7440-39-3	--	48	78.9		106		73.4		313
Beryllium	7440-41-7	--	--	1.55		1.38		1.39		1.55
Cadmium	7440-43-9	1.2	9.6	0.739	U	3.53		0.142	U	0.286
Calcium	7440-70-2	--	--	5590		2600		1830		1900
Chromium	7440-47-3	81	370	46.8		89.8		43		20.4
Cobalt	7440-48-4	--	10	13.5		27.2		13.1		6.1
Copper	7440-50-8	34	270	39.8		2280		47.7		227
Iron	7439-89-6	--	--	48300		28600		36600		16200
Lead	7439-92-1	47	218	26.1		402		35		129
Magnesium	7439-95-4	--	--	9740		5300		8400		2360
Manganese	7439-96-5	--	260	669		195		408		97.1
Mercury	7439-97-6	0.15	0.71	0.0841	J	2.97		0.163	J	0.315
Nickel	7440-02-0	21	52	38.1		159		31.3		48.2
Potassium	7440-09-7	--	--	7010		2940		6780		1160
Selenium	7782-49-2	--	1	11.1	U	10.1		2.13	U	22.6
Silver	7440-22-4	1	3.7	2.96	U	2.84		0.569	U	1.09
Sodium	7440-23-5	--	--	8060		8170		8410		2950
Thallium	7440-28-0	--	--	19.2	U	2.23	U	18.5	U	1.8
Vanadium	7440-62-2	--	57	73.1		62.6		62.1		25.4
Zinc	7440-66-6	150	410	106		763		92.8		144
										453
										216

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Table A-XII
Summary of Metals in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-02-B(R)/0.0-	SED-02-B(R)/3.5-	SED-02-C(R)/0.0-	SED-02-C(R)/2.0-	SED-03-A/6.0-6.5	SED-03-B(R)/1.5-	
	0.5(B)	4.0	0.5	2.5		2.0	
Date Sampled:	9/27/2019	9/27/2019	9/27/2019	9/27/2019	9/30/2019	9/30/2019	
Depth (ft):	0-0.5	3.5-4	0-0.5	2-2.5	6-6.5	1.5-2	
LAB Sample ID:	1162110	1162112	1162103	1162105	1163618	1163621	
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins
	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M						
Aluminum	7429-90-5	--	18000	6510	17700	18700	23800	26100	18500
Antimony	7440-36-0	--	9.3	2.07	U	3.12	U	2.8	10.4
Arsenic	7440-38-2	8.2	70	12.7		43.2		24.9	
Barium	7440-39-3	--	48	44.1		133		110	
Beryllium	7440-41-7	--	--	0.641		1.23		1.15	
Cadmium	7440-43-9	1.2	9.6	1.15		0.413	J	3.51	4.76
Calcium	7440-70-2	--	--	10100		14100		3210	3110
Chromium	7440-47-3	81	370	35		55.3		90.7	
Cobalt	7440-48-4	--	10	8.52		13.6		26.9	
Copper	7440-50-8	34	270	288		129		1780	753
Iron	7439-89-6	--	--	16400		43800		26800	
Lead	7439-92-1	47	218	121		82.4		217	
Magnesium	7439-95-4	--	--	3070		8500		5780	
Manganese	7439-96-5	--	260	128		556		267	
Mercury	7439-97-6	0.15	0.71	0.501		1.1		1.92	5.59
Nickel	7440-02-0	21	52	55.1		37		297	
Potassium	7440-09-7	--	--	1260		4330		3980	
Selenium	7782-49-2	--	1	7.93		2.75	U	3.69	J
Silver	7440-22-4	1	3.7	0.558	J	0.734	U	5.71	5.84
Sodium	7440-23-5	--	--	4480		4760		7660	
Thallium	7440-28-0	--	--	1.59	U	2.39	U	2.14	
Vanadium	7440-62-2	--	57	32.4		52.1		52.2	
Zinc	7440-66-6	150	410	245		172		696	669
								749	
									313

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XII
Summary of Metals in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-03-B(R)/4.5-	SED-03-C(R)/1.5-	SED-03-C(R)/6.0-	SED-04-A/3.25-	SED-04-B/2.0-2.5	SED-04-B/2.0-2.5
	5.0	2.0	6.5	3.75	(A)	(B)
Date Sampled:	9/30/2019	9/30/2019	9/30/2019	10/1/2019	10/1/2019	10/1/2019
Depth (ft):	4.5-5	1.5-2	6-6.5	3.25-3.75	2-2.5	2-2.5
LAB Sample ID:	1163622	1163613	1163615	1164539	1164533	1164534
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster
	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
Aluminum	7429-90-5	--	18000	16300	18700	24100	15900	12700	15300		
Antimony	7440-36-0	--	9.3	8.81	U	7.52	J	3.42	U	4.9	J
Arsenic	7440-38-2	8.2	70	17.8		82		36.5		70	
Barium	7440-39-3	--	48	74.4		216		96.7		208	
Beryllium	7440-41-7	--	--	1.05		1.3		1.37		1.3	
Cadmium	7440-43-9	1.2	9.6	0.63	J	11.9		0.839	J	5.77	
Calcium	7440-70-2	--	--	11800		3670		1940		3800	
Chromium	7440-47-3	81	370	33.1		114		50.7		127	
Cobalt	7440-48-4	--	10	11.6		11.3		12.3		11.4	
Copper	7440-50-8	34	270	100		1000		106		638	
Iron	7439-89-6	--	--	32900		30300		34800		32400	
Lead	7439-92-1	47	218	58.1		318		57.2		399	
Magnesium	7439-95-4	--	--	7280		5690		7360		6040	
Manganese	7439-96-5	--	260	496		225		319		284	
Mercury	7439-97-6	0.15	0.71	0.498		8.54		0.762		4.76	
Nickel	7440-02-0	21	52	35.1		92.2		31.4		65.2	
Potassium	7440-09-7	--	--	4470		3320		5380		3000	
Selenium	7782-49-2	--	1	7.78	U	14.1		3.01	U	2.7	J
Silver	7440-22-4	1	3.7	2.07	U	4.92		1.7	J	3.3	
Sodium	7440-23-5	--	--	3470		6640		6470		7660	
Thallium	7440-28-0	--	--	7.45	U	2.02	U	2.52	U	1.88	U
Vanadium	7440-62-2	--	57	48.2		70.5		53.1		54.9	
Zinc	7440-66-6	150	410	109		753		170		616	
										222	
											232

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

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NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XII
Summary of Metals in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-04-C(R)/1.5-	2.0	SED-04-C(R)/2.0-	2.5	SED-05-A/2.0-2.5	SED-05-B/2.0-2.5	SED-05-C/6.0-6.5	SED-06-A/2.0-2.5
Date Sampled:	10/1/2019		10/1/2019		10/1/2019		10/1/2019	
Depth (ft):	1.5-2		2-2.5		2-2.5		6-6.5	
LAB Sample ID:	1164531		1164532		1164545		1164542	
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M						
Aluminum	7429-90-5	--	18000	22300	19900	10500	3320	17200	19300
Antimony	7440-36-0	--	9.3	2.65	U	4	J	2.97	U
Arsenic	7440-38-2	8.2	70	39.4	68.2	27.1	18.6	76.1	48.2
Barium	7440-39-3	--	48	300	173	78.4	41.2	257	151
Beryllium	7440-41-7	--	--	1.87	1.57	1.24	0.552	J	1.5
Cadmium	7440-43-9	1.2	9.6	1.08	1.26	5.53	4.49	1.64	1.36
Calcium	7440-70-2	--	--	2120	2610	2560	1280	2780	5980
Chromium	7440-47-3	81	370	82.9	63.4	52.7	21.1	54.1	54.1
Cobalt	7440-48-4	--	10	10.7	10.6	59.6	13.6	10.6	11.9
Copper	7440-50-8	34	270	260	403	2400	1090	455	369
Iron	7439-89-6	--	--	30100	31000	21400	11500	30000	33000
Lead	7439-92-1	47	218	212	218	411	149	238	189
Magnesium	7439-95-4	--	--	6050	6420	3730	2530	5490	11700
Manganese	7439-96-5	--	260	226	280	116	83.2	309	406
Mercury	7439-97-6	0.15	0.71	1.18	2.18	0.956	0.279	1.65	1.13
Nickel	7440-02-0	21	52	37.1	54.9	272	184	60.5	48.9
Potassium	7440-09-7	--	--	3340	3820	1620	630	2990	3490
Selenium	7782-49-2	--	1	2.34	U	7	J	9.75	4.52
Silver	7440-22-4	1	3.7	0.807	J	0.787	U	1.54	J
Sodium	7440-23-5	--	--	7520		7630		6750	
Thallium	7440-28-0	--	--	2.03	U	2.56	U	2.27	U
Vanadium	7440-62-2	--	57	49.9		48.6		39.9	
Zinc	7440-66-6	150	410	269		335		1550	
								1060	490
									344

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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Underline indicates concentrations above the ESC ER-M

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NA = Not Analyzed

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MDL = Method Detection Limit

U = Compound not detected above MDL

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Table A-XII
Summary of Metals in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-06-B(R)/4.0-	4.5	SED-06-C/4.0-4.5	(A)	SED-06-C/4.0-4.5	3.5	SED-09-A(R)/3.0-	3.5	SED-09-B/5.0-5.5	5.0	SED-09-C(R)/4.5-	5.0	
Date Sampled:	10/2/2019		10/2/2019		10/2/2019		10/7/2019		10/7/2019		10/16/2019		
Depth (ft):		4-4.5		4-4.5		4-4.5		3-3.5		5-5.5		4.5-5	
LAB Sample ID:	1165589		1165582		1165583		1169339		1169336		1176387		
LAB:	Eurofins	Lancaster											

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
Aluminum	7429-90-5	--	18000	16700	14100	12900	26600	10800		17800	
Antimony	7440-36-0	--	9.3	2.33	U	2.71	J	3.86	J	5.23	J
Arsenic	7440-38-2	8.2	70	93	44.2	61.5	95.3	34.3		105	
Barium	7440-39-3	--	48	221	133	124	162	47.7		357	
Beryllium	7440-41-7	--	--	1.38	2.2	1.25	1.65	0.757		1.63	
Cadmium	7440-43-9	1.2	9.6	5.1	2.38	5.62	1.87	7.44		15.2	
Calcium	7440-70-2	--	--	2840	2080	2030	9250	1490		4700	
Chromium	7440-47-3	81	370	105	75.4	88.1	90.9	26.9		156	
Cobalt	7440-48-4	--	10	9.29	10.1	10.6	15.9	7.99		29.2	
Copper	7440-50-8	34	270	408	775	593	264	222		921	
Iron	7439-89-6	--	--	30700	24100	24100	48200	15900		33800	
Lead	7439-92-1	47	218	273	298	380	191	113		1160	
Magnesium	7439-95-4	--	--	5480	3560	3930	10200	2890		5960	
Manganese	7439-96-5	--	260	227	155	157	535	143		237	
Mercury	7439-97-6	0.15	0.71	3.85	1.02	1.79	2.12	0.268		8.39	
Nickel	7440-02-0	21	52	39.5	63.4	74.6	46.2	84.5		226	
Potassium	7440-09-7	--	--	3140	2010	2190	5320	951		2740	
Selenium	7782-49-2	--	1	2.05	U	2.06	U	3.16	J	2.85	U
Silver	7440-22-4	1	3.7	3.6	2.14	3.3	2.58	0.638	J	15.9	
Sodium	7440-23-5	--	--	6440	3990	5230	8140	3740		8440	
Thallium	7440-28-0	--	--	1.78	U	1.79	U	1.71	U	2.47	U
Vanadium	7440-62-2	--	57	48.8	69.7	68.5	73.7	44.5		62.3	
Zinc	7440-66-6	150	410	422	338	443	283	313		1240	

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

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Table A-XII
Summary of Metals in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-19-B/0.0-0.5	SED-19-C/0.0-0.5	SED-22-A/0.0-0.5	SED-22-A/2.0-2.5	SED-22-B/0.0-0.5	SED-22-B/9.0-9.5
Date Sampled:	9/20/2019	9/20/2019	9/25/2019	9/25/2019	9/25/2019	9/25/2019
Depth (ft):	0-0.5	0-0.5	0-0.5	2-2.5	0-0.5	9-9.5
LAB Sample ID:	1156543	1156542	1159737	1159739	1159740	1159742

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M							
Aluminum	7429-90-5	--	18000	13800	16600	35600	23600	23200	22000	
Antimony	7440-36-0	--	9.3	3.37	U	4.24	U	2.97	J	2.84
Arsenic	7440-38-2	8.2	70	23.9		24.2		49.5		17.3
Barium	7440-39-3	--	48	92.5		107		87.9		59.5
Beryllium	7440-41-7	--	--	1		1.05	J	1.52		1.41
Cadmium	7440-43-9	1.2	9.6	3.24		4.74		0.252	J	0.167
Calcium	7440-70-2	--	--	4310		3390		4120		2070
Chromium	7440-47-3	81	370	64.5		105		63.1		44
Cobalt	7440-48-4	--	10	15.7		16		13.2		12
Copper	7440-50-8	34	270	689		1090		126		21.1
Iron	7439-89-6	--	--	31200		35000		42800		41700
Lead	7439-92-1	47	218	249		251		84		14.7
Magnesium	7439-95-4	--	--	5990		6980		8560		8080
Manganese	7439-96-5	--	260	212		215		394		374
Mercury	7439-97-6	0.15	0.71	1.96		2.47		0.267	J	0.0648
Nickel	7440-02-0	21	52	128		130		40.8		26.3
Potassium	7440-09-7	--	--	2860		3850		6400		6130
Selenium	7782-49-2	--	--	1		11.4		6.55	J	8.81
Silver	7440-22-4	1	3.7	1.56	J	4.49		0.655	U	0.667
Sodium	7440-23-5	--	--	10900		12500		9570		8430
Thallium	7440-28-0	--	--	2.58	U	3.24	U	2.13	U	2.17
Vanadium	7440-62-2	--	--	57		55.8		60.7		64.1
Zinc	7440-66-6	150	410	563		633		167		85.2

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XII
Summary of Metals in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-22-C/0.0-0.5	SED-22-C/4.5-5.0	SED-23-A/0.0-0.5	SED-23-A/2.0-2.5	SED-23-B/0.0-0.5	SED-23-B/6.5-7.0
Date Sampled:	9/26/2019	9/26/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019
Depth (ft):	0-0.5	4.5-5	0-0.5	2-2.5	0-0.5	6.5-7
LAB Sample ID:	1160981	1160983	1165596	1165598	1165590	1165592

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M							
Aluminum	7429-90-5	--	18000	31300	24700	16300	19800	4470	19400	
Antimony	7440-36-0	--	9.3	8.39	J	8.98	J	26.6	1.69	U
Arsenic	7440-38-2	8.2	70	56.7		150		330	1100	6.18
Barium	7440-39-3	--	48	173		299		275	361	31.6
Beryllium	7440-41-7	--	--	2.07		1.61		1.35	0.633	1.7
Cadmium	7440-43-9	1.2	9.6	4.82		5.47		5.92	6.49	0.411
Calcium	7440-70-2	--	--	5720		4560		59200	9540	2000
Chromium	7440-47-3	81	370	108		193		130	147	21.6
Cobalt	7440-48-4	--	10	33.4		12.4		12.3	12.1	7.79
Copper	7440-50-8	34	270	1200		563		624	844	183
Iron	7439-89-6	--	--	34700		42300		30800	40600	11100
Lead	7439-92-1	47	218	269		483		522	539	124
Magnesium	7439-95-4	--	--	7700		8360		5840	7720	1820
Manganese	7439-96-5	--	260	342		374		287	360	70.7
Mercury	7439-97-6	0.15	0.71	7.1		5.56		6.13	6.33	0.135
Nickel	7440-02-0	21	52	142		48.8		72.2	55	58.7
Potassium	7440-09-7	--	--	4400		5490		2770	3180	873
Selenium	7782-49-2	--	--	1	31.6	8.84	J	2.97	U	3.12
Silver	7440-22-4	1	3.7	5.08		6.63		4.48	5.93	0.643
Sodium	7440-23-5	--	--	9010		8310		4650	2650	2850
Thallium	7440-28-0	--	--	3.47	U	3.95	J	2.57	U	2.7
Vanadium	7440-62-2	--	--	57	92.7	73.3		58.4	61.9	16.7
Zinc	7440-66-6	150	410	629		562		683	771	329

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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Underline indicates concentrations above the ESC ER-M

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NA = Not Analyzed

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MDL = Method Detection Limit

U = Compound not detected above MDL

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Table A-XII
Summary of Metals in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-23-C/0.0-0.5	SED-23-C/5.5-6.0	SED-24-A/0.0-0.5	SED-24-A/5.5-6.0	SED-24-A/5.5-6.0	SED-24-B/0.0-0.5
(A)					(B)	
Date Sampled:	10/2/2019	10/2/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019
Depth (ft):	0-0.5	5.5-6	0-0.5	5.5-6	5.5-6	0-0.5
LAB Sample ID:	1165593	1165595	1167968	1167970	1167971	1167972
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M						
Aluminum	7429-90-5	--	18000	6650	17700	12600	15300	9690	4370
Antimony	7440-36-0	--	9.3	1.76	U	2.85	J	3.25	U
Arsenic	7440-38-2	8.2	70	8.15	88.7	18.2	101	66.8	
Barium	7440-39-3	--	48	37.4	217	61.8	288	173	12.3
Beryllium	7440-41-7	--	--	1.06	1.58	0.963	1.45	0.978	0.527
Cadmium	7440-43-9	1.2	9.6	0.543	5.16	2.36	9.32	8.43	0.109
Calcium	7440-70-2	--	--	1840	2220	3440	3140	2270	937
Chromium	7440-47-3	81	370	19.6	95.7	52.5	121	81.6	13.2
Cobalt	7440-48-4	--	10	10.7	10.3	14.1	17.1	16	5.59
Copper	7440-50-8	34	270	97.2	373	548	851	539	97
Iron	7439-89-6	--	--	18000	31800	23600	26800	20500	9490
Lead	7439-92-1	47	218	68.4	312	209	732	526	49.3
Magnesium	7439-95-4	--	--	3150	5780	4500	4890	3470	1300
Manganese	7439-96-5	--	260	126	215	196	169	116	51.3
Mercury	7439-97-6	0.15	0.71	0.0345	U	3.24	0.847	4.77	5.3
Nickel	7440-02-0	21	52	27.1	37.8	93.4	160	122	27.4
Potassium	7440-09-7	--	--	1020	2860	2550	2910	2030	740
Selenium	7782-49-2	--	1	45	1.99	U	2.87	U	5.53
Silver	7440-22-4	1	3.7	0.45	J	3.25	3	7.62	5.8
Sodium	7440-23-5	--	--	2180	8080	6560	6160	5700	2140
Thallium	7440-28-0	--	--	1.34	U	1.72	U	12.4	U
Vanadium	7440-62-2	--	57	24.2	53	44.3	58.1	55	13.9
Zinc	7440-66-6	150	410	229	488	509	1820	1010	321

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XII
Summary of Metals in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-24-B/2.0-2.5	SED-24-C/0.0-0.5	SED-24-C/2.0-2.5	SED-25-A/0.0-0.5	SED-25-B/0.0-0.5	SED-25-C/0.0-0.5
Date Sampled:	10/4/2019	10/4/2019	10/4/2019	10/25/2019	10/24/2019	10/24/2019
Depth (ft):	2-2.5	0-0.5	2-2.5	0-0.5	0-0.5	0-0.5
LAB Sample ID:	1167974	1167975	1167977	1184595	1183319	1183317

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M							
Aluminum	7429-90-5	--	18000	4990	18400	16900	10700	5800	13400	
Antimony	7440-36-0	--	9.3	1.38	U	2.92	U	1.87	2.1	U
Arsenic	7440-38-2	8.2	70	5.13	61.8	33.6	16.4	7.48		18.1
Barium	7440-39-3	--	48	21.6	210	129	56.1	25.1		78.4
Beryllium	7440-41-7	--	--	1.03	1.39	1.07	0.714	0.495		0.813 J
Cadmium	7440-43-9	1.2	9.6	0.801	6.77	2.22	1.06	0.577		2.31
Calcium	7440-70-2	--	--	5550	3550	6440	4430	2480		3900
Chromium	7440-47-3	81	370	19.2	103	56.3	40.1	19.6		51.6
Cobalt	7440-48-4	--	10	6.42	13	10.6	9.2	5.04		11.4
Copper	7440-50-8	34	270	259	562	218	262	160		364
Iron	7439-89-6	--	--	12600	30100	27600	21500	14900		25300
Lead	7439-92-1	47	218	54.7	409	181	114	52.7		128
Magnesium	7439-95-4	--	--	2000	5470	5450	4440	2300		5150
Manganese	7439-96-5	--	260	78.4	272	327	186	76.5		197
Mercury	7439-97-6	0.15	0.71	0.0706	J	3.57	1.41	1.25	0.141	J
Nickel	7440-02-0	21	52	41.1	94	43	38.6	28.4		64.3
Potassium	7440-09-7	--	--	1380	3210	3160	2560	1060		2780
Selenium	7782-49-2	--	1	111	12.4	8.26	U	3.52	J	1.44 U
Silver	7440-22-4	1	3.7	1.06	4.97	3.07	1.18	J	0.878	J
Sodium	7440-23-5	--	--	2050	5980	1040	6010	2260		6960
Thallium	7440-28-0	--	--	5.29	U	11.1	U	7.16	U	1.25 U
Vanadium	7440-62-2	--	57	16.1	73.3	46.1	34.4	21.4		42.6
Zinc	7440-66-6	150	410	399	588	260	243	119		315

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-01-A/0.0-0.5	SED-01-A/0.5-1.0	SED-01-A/2.0-2.5	SED-01-B/0.0-0.5	SED-01-B/0.5-1.0	SED-01-B/2.0-2.5
Date Sampled:	9/23/2019	9/23/2019	9/23/2019	9/25/2019	9/25/2019	9/25/2019
Depth (ft):	0-0.5	0.5-1	2-2.5	0-0.5	0.5-1	2-2.5
LAB Sample ID:	1157565	1157566	1157567	1159743	1159744	1159745
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	5.8	U	6.4	U	8.7	J	4.9	U
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	5.8	U	6.4	U	6.1	U	43	
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	6.3	J	6.4	U	6.1	U	140	
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	9.2	J	6.4	U	6.1	U	420	
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	15	J	6.4	U	8.7	J	600	
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	5.8	U	6.4	U	6.1	U	4.9	U
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	5.8	U	6.4	U	6.1	U	4.9	U
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	5.8	U	6.4	U	6.1	U	65	
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	7.3	J	6.4	U	6.1	U	180	
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	7.3	J	6.4	U	6.1	U	240	
EPH, TOTAL FRACTIONATED	SRP340	--	--	23		6.4	U	8.7	J	840	
										1500	
											1900

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-01-C/0.0-0.5	SED-01-C/0.5-1.0	SED-01-C/2.0-2.5	SED-02-A(R)/0.0-	SED-02-A(R)/0.5-	SED-02-B(R)/0.0-
				0.5	1.0	0.5(A)
Date Sampled:	9/23/2019	9/23/2019	9/23/2019	9/27/2019	9/27/2019	9/27/2019
Depth (ft):	0-0.5	0.5-1	2-2.5	0-0.5	0.5-1	0-0.5
LAB Sample ID:	1157562	1157563DL	1157564	1162106	1162107	1162109
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster
	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster
	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M																	
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	31		140	J	5.8	U	4.1	U	3.8	U	21	U					
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	150		1000		5.8	U	20		3.8	U	46	J					
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	290		2000		5.8	U	53		5.7	J	120						
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	610		2000		5.8	U	170		11	J	280						
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	1100		5200		5.8	U	240		17		440						
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	5	U	26	U	5.8	U	4.1	U	3.8	U	21	U					
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	6.6	J	54	J	5.8	U	4.1	U	3.8	U	21	U					
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	130		1300		5.8	U	25		3.8	U	68	J					
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	210		1600		5.8	U	77		8.7	J	270						
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	350		2900		5.8	U	100		8.7	J	340						
EPH, TOTAL FRACTIONATED	SRP340	--	--	1400		8100		5.8	U	350		26		780						

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-02-B(R)/0.0-	SED-02-B(R)/0.5-	SED-02-C(R)/0.0-	SED-02-C(R)/0.5-	SED-02-C(R)/2.0-	SED-03-A/0.0-0.5
	0.5(B)	1.0	0.5	1.0	2.5	
Date Sampled:	9/27/2019	9/27/2019	9/27/2019	9/27/2019	9/27/2019	9/30/2019
Depth (ft):	0-0.5	0.5-1	0-0.5	0.5-1	2-2.5	0-0.5
LAB Sample ID:	1162110	1162111DL	1162103	1162104DL	1162105	1163616
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	7.4	J	35	J	6.1	J	210	440
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	92		170		54		580	2300
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	240		400		200		1300	2600
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	520		1000		620		3500	4200
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	860		1600		880		5500	9500
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	4.6	U	5.9	U	5.1	U	22	35
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	4.6	U	11	J	5.3	J	43	J
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	110		170		60		600	1300
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	250		340		190		820	1300
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	360		510		260		1500	2900
EPH, TOTAL FRACTIONATED	SRP340	--	--	1200		2100		1100		7000	12000
											2200

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-03-A/0.5-1.0	SED-03-A/6.0-6.5	SED-03-B(R)/0.0-	SED-03-B(R)/0.5-	SED-03-C(R)/0.0-	SED-03-C(R)/0.5-
			0.5	1.0	0.5	1.0
Date Sampled:	9/30/2019	9/30/2019	9/30/2019	9/30/2019	9/30/2019	9/30/2019
Depth (ft):	0.5-1	6-6.5	0-0.5	0.5-1	0-0.5	0.5-1
LAB Sample ID:	1163617DL	1163618DL	1163619	1163620	1163610	1163611
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M									
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	1000	860	4	U	17	3.9	U	62	J
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	2900	1800	27		76	29		380	
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	2300	2200	88		120	91		1300	
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	3700	2100	200		270	230		2200	
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	9900	6900	320		490	350		3900	
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	48	90	J	4	U	4	U	3.9	U
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	350	410		4	U	7.1	J	3.9	U
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	1000	1900	83		91	31		510	
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	1100	1900	220		120	110		970	
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	2500	4300	300		210	140		1500	
EPH, TOTAL FRACTIONATED	SRP340	--	--	12000	11000	620		700	490		5400	

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-03-C(R)/1.0-	1.5	SED-03-C(R)/2.5-	3.0	SED-04-A/0.0-0.5	SED-04-A/0.5-1.0	SED-04-A/3.25-	3.75	SED-04-B/0.0-0.5
Date Sampled:	9/30/2019		9/30/2019		10/1/2019	10/1/2019	10/1/2019		10/1/2019
Depth (ft):		1-1.5		2.5-3		0-0.5	0.5-1	3.25-3.75	0-0.5
LAB Sample ID:	1163612		1163614DL		1164537	1164538DL	1164539DL		1164536
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	370	470	5.1	U	38	1100	4.1	U
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	1500	1100	51		180	2600		19
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	3700	800	160		460	3000		52
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	5200	780	420		930	2700		240
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	11000	3100	630		1600	9500		310
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	33	U	42	5.1	U	5.2	U	200
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	290		260	5.1	U	13	J	640
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	2400	490	78		280	2300		45
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	2600	380	190		500	1400		120
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	5300	1200	270		800	4600		170
EPH, TOTAL FRACTIONATED	SRP340	--	--	16000	4300	900		2400	14000		480

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-04-B/0.5-1.0	SED-04-B/2.0-2.5	SED-04-B/2.0-2.5	SED-04-C(R)/0.0-	SED-04-C(R)/0.5-	SED-04-C(R)/2.0-
(A)	(B)		0.5	1.0	2.5	
Date Sampled:	10/1/2019	10/1/2019	10/1/2019	10/1/2019	10/1/2019	10/1/2019
Depth (ft):	0.5-1	2-2.5	2-2.5	0-0.5	0.5-1	2-2.5
LAB Sample ID:	1164535	1164533	1164534	1164529	1164530	1164532
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M						
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	19	140	32	4200	3100	190
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	73	290	100	8000	5500	540
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	230	230	140	5300	3200	710
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	580	500	230	4400	2400	940
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	910	1100	500	22000	14000	2400
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	4.2	U	4.5	U	370	380
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	13	J	34	15	J	1800
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	200		120	100	5300	4800
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	270		160	96	3100	2600
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	470		320	210	11000	9600
EPH, TOTAL FRACTIONATED	SRP340	--	--	1400		1500	720	33000	24000
									4900

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-05-A/0.0-0.5	SED-05-A/0.5-1.0	SED-05-A/2.0-2.5	SED-05-B/0.0-0.5	SED-05-B/0.5-1.0	SED-05-B/2.0-2.5
Date Sampled:	10/1/2019	10/1/2019	10/1/2019	10/1/2019	10/1/2019	10/1/2019
Depth (ft):	0-0.5	0.5-1	2-2.5	0-0.5	0.5-1	2-2.5
LAB Sample ID:	1164543	1164544	1164545DL	1164540	1164541	1164542

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M									
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	9.8	J	15	J	50	4	U	3.8	U
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	100		120		190	4	U	3.8	U
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	260		320		440	4	U	11	J
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	650		930		1000	17		33	
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	1000		1400		1700	17		44	
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	7.8	U	6.8	U	6.3	J	4	U	3.8
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	7.8	U	7.5	J	21		4	U	3.8
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	120		140		300		5.3	J	7.8
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	270		320		480		9.5	J	46
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	400		460		810		15		54
EPH, TOTAL FRACTIONATED	SRP340	--	--	1400		1900		2500		32		98
												3500

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-05-C/0.0-0.5	SED-05-C/0.5-1.0	SED-05-C/6.0-6.5	SED-06-A/0.0-0.5	SED-06-A/0.5-1.0	SED-06-A/2.0-2.5
Date Sampled:	10/1/2019	10/1/2019	10/1/2019	10/2/2019	10/2/2019	10/2/2019
Depth (ft):	0-0.5	0.5-1	6-6.5	0-0.5	0.5-1	2-2.5
LAB Sample ID:	1164546	1164547DL	1164548DL	1165584DL	1165585DL	1165586

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
EPH ALIPHATIC FRACTION (C09-C12)	<i>SRP248</i>	--	--	3.7	U	280	440	100	76	33	J
EPH ALIPHATIC FRACTION (C12-C16)	<i>SRP259</i>	--	--	15		660	760	370	340	280	
EPH ALIPHATIC FRACTION (C16-C21)	<i>SRP260</i>	--	--	35		980	860	560	640	760	
EPH ALIPHATIC FRACTION (C21-C40)	<i>SRP271</i>	--	--	80		1500	1100	750	1200	1900	
EPH, TOTAL ALIPHATIC FRACTION	<i>SRP282</i>	--	--	130		3500	3200	1800	2200	3000	
EPH, AROMATIC FRACTION (C10-C12)	<i>SRP293</i>	--	--	3.7	U	23	41	J	8.8	U	28
EPH, AROMATIC FRACTION (C12-C16)	<i>SRP306</i>	--	--	3.7	U	43	210		31	52	66
EPH, AROMATIC FRACTION (C16-C21)	<i>SRP317</i>	--	--	12	J	600	700	390	540	600	
EPH, AROMATIC FRACTION (C21-C36)	<i>SRP328</i>	--	--	30		860	730	580	750	880	
EPH, TOTAL AROMATIC FRACTION	<i>SRP339</i>	--	--	42		1500	1700	1000	1300	1500	
EPH, TOTAL FRACTIONATED	<i>SRP340</i>	--	--	170		5000	4900	2800	3600	4600	

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-06-B(R)/0.0-	0.5	SED-06-B(R)/0.5-	1.0	SED-06-C/0.0-0.5	SED-06-C/0.5-1.0	SED-06-C/4.0-4.5	SED-06-C/4.0-4.5
						(A)	(B)	
Date Sampled:	10/2/2019		10/2/2019		10/2/2019		10/2/2019	10/2/2019
Depth (ft):	0-0.5		0.5-1		0-0.5		0.5-1	4-4.5
LAB Sample ID:	1165587		1165588		1165580		1165581DL	1165582DL
LAB:	Eurofins		Lancaster		Eurofins		Lancaster	Eurofins
							Lancaster	Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M									
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	4	U	4	U	15	J	16	J	120
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	4	U	4	U	88		100		280
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	4	U	4	U	200		260		380
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	10	J	13		700		910		750
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	10	J	13		1000		1300		1500
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	4	U	4	U	6.1	U	11	J	14
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	4	U	4	U	6.1	U	13	J	53
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	4	U	4	U	67		160		340
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	4	U	4	U	170		320		520
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	4	U	4	U	230		500		930
EPH, TOTAL FRACTIONATED	SRP340	--	--	10	J	13		1200		1800		2500
												14000

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-09-A(R)/0.0-	0.5	SED-09-A(R)/0.5-	1.0	SED-09-B/0.0-0.5	SED-09-B/0.5-1.0	SED-09-B/5.0-5.5	SED-09-C(R)/0.0-	0.5
Date Sampled:	10/7/2019		10/7/2019		10/7/2019		10/7/2019		10/16/2019
Depth (ft):	0-0.5		0.5-1		0-0.5		0.5-1		5-5.5
LAB Sample ID:	1169337		1169338DL		1169334		1169335		1169336DL
LAB:	Eurofins		Lancaster		Eurofins		Lancaster		Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	5.8	U	31	U	3.9	U	3.6	U
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	44		170		3.9	U	3.7	J
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	150		570		4.5	J	9.7	J
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	550		1200		19		41	
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	750		1900		23		55	
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	5.8	U	6.2	U	3.9	U	3.6	U
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	5.8	U	24		3.9	U	3.6	U
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	61		300		3.9	U	22	
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	150		340		12	J	55	
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	210		660		12	J	76	
EPH, TOTAL FRACTIONATED	SRP340	--	--	960		2600		35		130	
										4600	
											1300

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-09-C(R)/0.5-SED-09-C(R)/2.75-	1.0	3.25	SED-19-B/0.0-0.5	SED-19-B/0.5-1.0	SED-19-C/0.0-0.5	SED-19-C/0.5-1.0
Date Sampled:	10/16/2019	10/16/2019	9/20/2019	9/20/2019	9/20/2019	9/20/2019	9/20/2019
Depth (ft):	0.5-1	2.75-3.25	0-0.5	0.5-1	0-0.5	0.5-1	0.5-1
LAB Sample ID:	1176385	1176386DL	1156543DL	1156544DL	1156542DL	1156541	
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	200	500	37	J	36	J	35	J
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	550	1100	220		200		180	
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	860	1400	580		490		430	
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	1600	2100	1400		1400		1400	
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	3200	5100	2300		2100		2100	
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	24	U	50	J	6.9	U	8.7	U
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	37	J	160		15	J	9.3	J
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	480	770	330		250		160	
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	500	840	700		510		430	
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	1000	1800	1000		770		590	
EPH, TOTAL FRACTIONATED	SRP340	--	--	4200	6900	3300		2900		2600	
											2700

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-22-A/0.0-0.5	SED-22-A/2.0-2.5	SED-22-B/0.0-0.5	SED-22-B/9.0-9.5	SED-22-C/0.0-0.5	SED-22-C/4.5-5.0
Date Sampled:	9/25/2019	9/25/2019	9/25/2019	9/25/2019	9/26/2019	9/26/2019
Depth (ft):	0-0.5	2-2.5	0-0.5	9-9.5	0-0.5	4.5-5
LAB Sample ID:	1159737	1159739	1159740	1159742DL	1160981DL	1160983DL

LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Eurofins Eurofins Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	6.6	U	6.6	U	44	1000	80	J
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	6.6	U	6.6	U	140	2600	450	
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	16	J	6.6	U	230	2200	980	
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	27		6.6	U	300	2900	2700	
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	42		6.6	U	710	8700	4200	
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	6.6	U	6.6	U	6.8	U	49	J
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	6.6	U	6.6	U	13	J	330	
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	9.5	J	6.6	U	120	1300	330	
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	17	J	6.6	U	78	1200	780	
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	27		6.6	U	210	2900	1100	
EPH, TOTAL FRACTIONATED	SRP340	--	--	69		6.6	U	920	12000	5300	
											24000

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

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U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-23-A/0.0-0.5	SED-23-A/2.0-2.5	SED-23-B/0.0-0.5	SED-23-B/6.5-7.0	SED-23-C/0.0-0.5	SED-23-C/5.5-6.0
Date Sampled:	10/2/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019
Depth (ft):	0-0.5	2-2.5	0-0.5	6.5-7	0-0.5	5.5-6
LAB Sample ID:	1165596DL	1165598DL	1165590	1165592DL	1165593	1165595DL
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	880	1800	3.7	U	880	3.5	U	1300
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	3400	4200	14		2200	8.6	J	2500
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	4000	4200	36		910	22		1500
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	5000	6500	100		1200	94		3000
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	13000	17000	150		5300	120		8300
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	130	J	75	J	36	J	3.5	U
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	610	570	3.7	U	280	3.5	U	290
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	2400	2500	23		730	20		730
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	1900	3000	50		570	56		850
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	5000	6100	74		1600	75		1900
EPH, TOTAL FRACTIONATED	SRP340	--	--	18000	23000	220		6900	200		10000

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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NA = Not Analyzed

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MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-24-A/0.0-0.5	SED-24-A/5.5-6.0	SED-24-A/5.5-6.0	SED-24-B/0.0-0.5	SED-24-B/2.0-2.5	SED-24-C/0.0-0.5
(A)			(B)			
Date Sampled:	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019
Depth (ft):	0-0.5	5.5-6	5.5-6	0-0.5	2-2.5	0-0.5
LAB Sample ID:	1167968	1167970DL	1167971DL	1167972	1167974	1167975DL
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M									
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	9.9	J	2100	1400	3.9	U	3.5	U	180 J
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	82		5400	3400	3.9	U	3.5	U	870
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	170		5900	3900	3.9	U	8.1	J	2400
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	670		6200	5200	7.4	J	20		4200
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	940		20000	14000	7.4	J	28		7600
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	8.5	J	410	280	3.9	U	3.5	U	27 U
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	5.8	U	940	610	3.9	U	3.5	U	110
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	70		3100	1900	3.9	U	6.2	J	1100
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	200		2400	1700	7.3	J	18		1400
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	280		6800	4600	7.3	J	24		2600
EPH, TOTAL FRACTIONATED	SRP340	--	--	1200		26000	18000	15		52		10000

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

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U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.: SED-24-C/2.0-2.5 SED-25-A/0.0-0.5 SED-25-B/0.0-0.5 SED-25-C/0.0-0.5
 Date Sampled: 10/4/2019 10/25/2019 10/24/2019 10/24/2019
 Depth (ft): 2-2.5 0-0.5 0-0.5 0-0.5
 LAB Sample ID: 1167977DL 1184595 1183319 1183317
 LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M						
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	810	5.1	U	20	U	5.5 U
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	1800	37		87		7.3 J
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	2800	200		310		100
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	3900	520		620		560
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	9300	750		1000		670
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	78	J	5.1	U	20	U
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	280		5.1	U	20	U
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	1300		61		220	
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	1200		200		510	
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	2900		270		730	
EPH, TOTAL FRACTIONATED	SRP340	--	--	12000		1000		1700	
									910

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIV
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.:	SED-10-A/2.0-2.5 SED-10-B/2.0-2.5 SED-10-C/2.0-2.5 SED-WCBG-1/0.5-SED-WCBG-1/2.0-SED-WCBG-2/0.5-						1.0	2.5	1.0
Date Sampled:	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/18/2019		
Depth (ft):	2-2.5	2-2.5	2-2.5	0.5-1	2-2.5	0.5-1			
LAB Sample ID:	1175350	1175353	1175340	1175346	1175347	1178619			
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M										
Acetone	67-64-1	--	--	0.009	J	0.006	U	0.013	J	0.02	J	0.024	J
Benzene	71-43-2	0.34	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U
Bromochloromethane	74-97-5	--	--	0.0006	U	0.0006	U	0.0008	U	0.0007	U	0.0009	U
Bromodichloromethane	75-27-4	--	--	0.0004	U	0.0004	U	0.0005	U	0.0005	U	0.0006	U
Bromoform	75-25-2	--	--	0.005	U	0.005	U	0.006	U	0.006	U	0.008	U
Bromomethane	74-83-9	--	--	0.0007	U	0.0007	U	0.0009	U	0.0009	U	0.001	U
2-Butanone (MEK)	78-93-3	--	--	0.001	U	0.0009	U	0.003	J	0.004	J	0.006	J
Carbon Disulfide	75-15-0	--	--	0.0006	U	0.0006	U	0.002	J	0.001	J	0.0009	U
Carbon tetrachloride	56-23-5	--	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U
Chlorobenzene	108-90-7	--	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U
Chloroethane	75-00-3	--	--	0.001	U	0.0009	U	0.001	U	0.001	U	0.002	U
Chloroform	67-66-3	--	--	0.0006	U	0.0006	U	0.0008	U	0.0007	U	0.0009	U
Chloromethane	74-87-3	--	--	0.0006	U	0.0006	U	0.0008	U	0.0007	U	0.0009	U
cis-1,2-Dichloroethene	156-59-2	--	--	0.0005	U	0.0005	U	0.005	J	0.0006	U	0.0008	U
cis-1,3-Dichloropropene	10061-01-5	--	--	0.0004	U	0.0004	U	0.0005	U	0.0005	U	0.0006	U
Cyclohexane	110-82-7	--	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U
1,2-Dibromo-3-chloropropane	96-12-8	--	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U
Dibromochloromethane	124-48-1	--	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U
1,2-Dibromoethane	106-93-4	--	--	0.0004	U	0.0004	U	0.0005	U	0.0005	U	0.0006	U
1,2-Dichlorobenzene	95-50-1	--	0.013	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U
1,3-Dichlorobenzene	541-73-1	--	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U
1,4-Dichlorobenzene	106-46-7	--	0.11	0.0004	U	0.0004	U	0.0005	U	0.0005	U	0.0006	U
Dichlorodifluoromethane	75-71-8	--	--	0.0006	U	0.0006	U	0.0008	U	0.0007	U	0.0009	U
1,1-Dichloroethane	75-34-3	--	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U
1,2-Dichloroethane	107-06-2	--	--	0.0006	U	0.0006	U	0.0008	U	0.0007	U	0.0009	U
1,1-Dichloroethene	75-35-4	--	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U
1,2-Dichloropropane	78-87-5	--	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U
1,3-Dichloropropene (total)	542-75-6	--	--	0.0009	U	0.0008	U	0.001	U	0.001	U	0.001	U
Ethylbenzene	100-41-4	1.4	--	0.0004	U	0.0004	U	0.0005	U	0.0005	U	0.0006	U
2-Hexanone	591-78-6	--	--	0.001	U	0.0009	U	0.001	U	0.001	U	0.002	U
Isopropylbenzene	98-82-8	--	--	0.0004	U	0.0004	U	0.0005	U	0.0005	U	0.0006	U
Methyl Acetate	79-20-9	--	--	0.001	U	0.0009	U	0.001	U	0.001	U	0.002	U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIV
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-10-A/2.0-2.5 SED-10-B/2.0-2.5 SED-10-C/2.0-2.5 SED-WCBG-1/0.5-SED-WCBG-1/2.0-SED-WCBG-2/0.5-
1.0 2.5 1.0
Date Sampled: 10/15/2019 10/15/2019 10/15/2019 10/15/2019 10/15/2019 10/18/2019
Depth (ft): 2-2.5 2-2.5 2-2.5 0.5-1 2-2.5 0.5-1
LAB Sample ID: 1175350 1175353 1175340 1175346 1175347 1178619
LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M													
Methyl Tert Butyl Ether (MTBE)	1634-04-4	--	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U	0.0007	U	
4-methyl-2-pentanone (MIBK)	108-10-1	--	--	0.001	U	0.0009	U	0.001	U	0.001	U	0.002	U	0.001	U	
Methylcyclohexane	108-87-2	--	--	0.0006	U	0.0006	U	0.0008	U	0.0007	U	0.0009	U	0.0008	U	
Methylene chloride	75-09-2	--	--	0.002	U	0.002	U	0.003	U	0.002	U	0.003	U	0.003	U	
Styrene	100-42-5	--	--	0.0004	U	0.0004	U	0.0005	U	0.0005	U	0.0006	U	0.0005	U	
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.0004	U	0.0004	U	0.0005	U	0.0005	U	0.0006	U	0.0005	U	
Tetrachloroethene	127-18-4	0.45	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U	0.0007	U	
Toluene	108-88-3	2.5	--	0.0006	U	0.0006	U	0.0008	U	0.0007	J	0.0009	U	0.0008	U	
trans-1,2-Dichloroethene	156-60-5	--	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U	0.003	J	
trans-1,3-Dichloropropene	10061-02-6	--	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U	0.0007	U	
Freon 113	76-13-1	--	--	0.0006	U	0.0006	U	0.0008	U	0.0007	U	0.0009	U	0.0008	U	
1,2,3-Trichlorobenzene	87-61-6	--	--	0.005	U	0.005	U	0.006	U	0.006	U	0.008	U	0.007	U	
1,1,1-Trichloroethane	71-55-6	--	--	0.0006	U	0.0006	U	0.0008	U	0.0007	U	0.0009	U	0.0008	U	
1,1,2-Trichloroethane	79-00-5	--	--	0.0005	U	0.0005	U	0.0006	U	0.0006	U	0.0008	U	0.0007	U	
Trichloroethene	79-01-6	1.6	--	0.0005	U	0.0008	J	0.0006	U	0.0006	U	0.0008	U	0.0007	U	
Trichlorofluoromethane	75-69-4	--	--	0.0007	U	0.0007	U	0.0009	U	0.0009	U	0.001	U	0.001	U	
1,2,4-Trichlorobenzene	120-82-1	--	0.0048	0.005	U	0.005	U	0.006	U	0.006	U	0.008	U	0.007	U	
Vinyl Chloride	75-01-4	--	--	0.0006	U	0.0006	U	0.0008	U	0.0007	U	0.0009	U	0.012		
m,p-Xylene	179601-23-1	--	--	0.001	U	0.0009	U	0.001	U	0.001	U	0.002	U	0.001	U	
o-Xylene	95-47-6	--	--	0.0004	U	0.0004	U	0.0005	U	0.0005	U	0.0006	U	0.0005	U	
Xylenes (total)	1330-20-7	0.12	--	ND												
Total VOC TIC	SRP170	--	--	ND	U	ND	U	ND	U	ND	J	ND	U	ND	U	

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIV
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-2/2.0-SED-WCBG-3/0.5-SED-WCBG-3/0.5-SED-WCBG-3/2.5-SED-WCBG-4/0.5-SED-WCBG-4/1.0-
2.5 1.0(A) 1.0(B) 3.0 1.0 1.5
Date Sampled: 10/18/2019 10/15/2019 10/15/2019 10/15/2019 10/16/2019 10/16/2019
Depth (ft): 2-2.5 0.5-1 0.5-1 2.5-3 0.5-1 1-1.5
LAB Sample ID: 1178620 1175342 1175343 1175344 1176399 1176400
LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M													
Acetone	67-64-1	--	--	0.005	U	0.012	J	0.013	J	0.091		0.011	J	0.01	J	
Benzene	71-43-2	0.34	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	
Bromochloromethane	74-97-5	--	--	0.0005	U	0.0009	U	0.0009	U	0.002	U	0.0007	U	0.0007	U	
Bromodichloromethane	75-27-4	--	--	0.0004	U	0.0006	U	0.0006	U	0.001	U	0.0005	U	0.0005	U	
Bromoform	75-25-2	--	--	0.004	U	0.007	U	0.007	U	0.018	U	0.006	U	0.006	U	
Bromomethane	74-83-9	--	--	0.0006	U	0.001	U	0.001	U	0.003	U	0.0009	U	0.0009	U	
2-Butanone (MEK)	78-93-3	--	--	0.0009	U	0.003	J	0.003	J	0.019	J	0.002	J	0.002	J	
Carbon Disulfide	75-15-0	--	--	0.0005	U	0.003	J	0.002	J	0.005	J	0.0007	U	0.0007	U	
Carbon tetrachloride	56-23-5	--	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	
Chlorobenzene	108-90-7	--	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	
Chloroethane	75-00-3	--	--	0.0009	U	0.001	U	0.001	U	0.004	U	0.001	U	0.001	U	
Chloroform	67-66-3	--	--	0.0005	U	0.0009	U	0.0009	U	0.002	U	0.0007	U	0.0007	U	
Chloromethane	74-87-3	--	--	0.0005	U	0.0009	U	0.0009	U	0.002	U	0.0007	U	0.0007	U	
cis-1,2-Dichloroethene	156-59-2	--	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	
cis-1,3-Dichloropropene	10061-01-5	--	--	0.0004	U	0.0006	U	0.0006	U	0.001	U	0.0005	U	0.0005	U	
Cyclohexane	110-82-7	--	--	0.0004	U	0.0007	U	0.0007	U	0.014	J	0.0006	U	0.0006	U	
1,2-Dibromo-3-chloropropane	96-12-8	--	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	
Dibromochloromethane	124-48-1	--	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	
1,2-Dibromoethane	106-93-4	--	--	0.0004	U	0.0006	U	0.0006	U	0.001	U	0.0005	U	0.0005	U	
1,2-Dichlorobenzene	95-50-1	--	0.013	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	
1,3-Dichlorobenzene	541-73-1	--	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	
1,4-Dichlorobenzene	106-46-7	--	0.11	0.0004	U	0.0006	U	0.001	J	0.001	U	0.0005	U	0.0005	U	
Dichlorodifluoromethane	75-71-8	--	--	0.0005	U	0.0009	U	0.0009	U	0.002	U	0.0007	U	0.0007	U	
1,1-Dichloroethane	75-34-3	--	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	
1,2-Dichloroethane	107-06-2	--	--	0.0005	U	0.0009	U	0.0009	U	0.002	U	0.0007	U	0.0007	U	
1,1-Dichloroethene	75-35-4	--	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	
1,2-Dichloropropane	78-87-5	--	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	
1,3-Dichloropropene (total)	542-75-6	--	--	0.0008	U	0.001	U	0.001	U	0.003	U	0.001	U	0.001	U	
Ethylbenzene	100-41-4	1.4	--	0.0004	U	0.0006	U	0.0006	U	0.001	U	0.0005	U	0.0005	U	
2-Hexanone	591-78-6	--	--	0.0009	U	0.001	U	0.001	U	0.004	U	0.001	U	0.001	U	
Isopropylbenzene	98-82-8	--	--	0.0004	U	0.0006	U	0.0006	U	0.003	J	0.0005	U	0.0005	U	
Methyl Acetate	79-20-9	--	--	0.0009	U	0.001	U	0.001	U	0.004	U	0.001	U	0.001	U	

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIV
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-2/2.0-SED-WCBG-3/0.5-SED-WCBG-3/0.5-SED-WCBG-3/2.5-SED-WCBG-4/0.5-SED-WCBG-4/1.0-
2.5 1.0(A) 1.0(B) 3.0 1.0 1.5
Date Sampled: 10/18/2019 10/15/2019 10/15/2019 10/15/2019 10/16/2019 10/16/2019
Depth (ft): 2-2.5 0.5-1 0.5-1 2.5-3 0.5-1 1-1.5
LAB Sample ID: 1178620 1175342 1175343 1175344 1176399 1176400
LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M																	
Methyl Tert Butyl Ether (MTBE)	1634-04-4	--	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	
4-methyl-2-pentanone (MIBK)	108-10-1	--	--	0.0009	U	0.001	U	0.001	U	0.004	U	0.001	U	0.001	U	0.001	U	0.001	U	
Methylcyclohexane	108-87-2	--	--	0.0005	U	0.0009	U	0.0009	U	0.015	J	0.0007	U	0.0007	U	0.0007	U	0.0007	U	
Methylene chloride	75-09-2	--	--	0.002	U	0.003	U	0.003	U	0.007	U	0.002	U	0.002	U	0.002	U	0.002	U	
Styrene	100-42-5	--	--	0.0004	U	0.0006	U	0.0006	U	0.001	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.0004	U	0.0006	U	0.0006	U	0.001	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	
Tetrachloroethene	127-18-4	0.45	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	
Toluene	108-88-3	2.5	--	0.0005	J	0.0009	U	0.0009	U	0.002	U	0.0007	U	0.0007	U	0.0007	U	0.0007	U	
trans-1,2-Dichloroethene	156-60-5	--	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	
trans-1,3-Dichloropropene	10061-02-6	--	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	
Freon 113	76-13-1	--	--	0.0005	U	0.0009	U	0.0009	U	0.002	U	0.0007	U	0.0007	U	0.0007	U	0.0007	U	
1,2,3-Trichlorobenzene	87-61-6	--	--	0.004	U	0.007	U	0.007	U	0.018	U	0.006	U	0.006	U	0.006	U	0.006	U	
1,1,1-Trichloroethane	71-55-6	--	--	0.0005	U	0.0009	U	0.0009	U	0.002	U	0.0007	U	0.0007	U	0.0007	U	0.0007	U	
1,1,2-Trichloroethane	79-00-5	--	--	0.0004	U	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	
Trichloroethene	79-01-6	1.6	--	0.004	J	0.0007	U	0.0007	U	0.002	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	
Trichlorofluoromethane	75-69-4	--	--	0.0006	U	0.001	U	0.001	U	0.003	U	0.0009	U	0.0009	U	0.0009	U	0.0009	U	
1,2,4-Trichlorobenzene	120-82-1	--	0.0048	0.004	U	0.007	U	0.007	U	0.018	U	0.006	U	0.006	U	0.006	U	0.006	U	
Vinyl Chloride	75-01-4	--	--	0.0005	U	0.0009	U	0.0009	U	0.002	U	0.0007	U	0.0007	U	0.0007	U	0.0007	U	
m,p-Xylene	179601-23-1	--	--	0.0009	U	0.001	U	0.001	U	0.007	J	0.001	U	0.001	U	0.001	U	0.001	U	
o-Xylene	95-47-6	--	--	0.0004	U	0.0006	U	0.0006	U	0.006	J	0.0005	U	0.0005	U	0.0005	U	0.0005	U	
Xylenes (total)	1330-20-7	0.12	--	ND		ND		ND		0.013		ND		ND		ND		ND		
Total VOC TIC	SRP170	--	--	ND	U	0.41	J	0.64	J	1.5	J	0.012	J	ND	U	ND	U	ND	U	

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIV
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-5/0.5-SED-WCBG-5/2.0-SED-WCBG-5/2.0-SED-WCBG-6/0.5-SED-WCBG-6/2.0-SED-WCBG-7/0.5-
 1.0 2.5(A) 2.5(B) 1.0 2.5 1.0(A)
 Date Sampled: 10/18/2019 10/18/2019 10/18/2019 10/16/2019 10/16/2019 10/16/2019
 Depth (ft): 0.5-1 2-2.5 2-2.5 0.5-1 2-2.5 0.5-1
 LAB Sample ID: 1178615 1178616 1178617 1176402 1176403 1176395
 LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M	1.0	2.5(A)	2.5(B)	1.0	2.5	1.0(A)
Acetone	67-64-1	--	--	0.007	U	0.017	J	0.031	0.025
Benzene	71-43-2	0.34	--	0.0006	U	0.0006	U	0.0009	U
Bromochloromethane	74-97-5	--	--	0.0007	U	0.0007	U	0.001	U
Bromodichloromethane	75-27-4	--	--	0.0005	U	0.0005	U	0.0007	U
Bromoform	75-25-2	--	--	0.006	U	0.006	U	0.009	U
Bromomethane	74-83-9	--	--	0.0008	U	0.0009	U	0.0008	U
2-Butanone (MEK)	78-93-3	--	--	0.001	U	0.004	J	0.004	J
Carbon Disulfide	75-15-0	--	--	0.0007	U	0.0008	J	0.0008	J
Carbon tetrachloride	56-23-5	--	--	0.0006	U	0.0006	U	0.0009	U
Chlorobenzene	108-90-7	--	--	0.0006	U	0.0006	U	0.0009	U
Chloroethane	75-00-3	--	--	0.001	U	0.001	U	0.001	U
Chloroform	67-66-3	--	--	0.0007	U	0.0007	U	0.001	U
Chloromethane	74-87-3	--	--	0.0007	U	0.0007	U	0.001	U
cis-1,2-Dichloroethene	156-59-2	--	--	0.0006	U	0.0006	U	0.0009	U
cis-1,3-Dichloropropene	10061-01-5	--	--	0.0005	U	0.0005	U	0.0007	U
Cyclohexane	110-82-7	--	--	0.0006	U	0.0006	U	0.0009	U
1,2-Dibromo-3-chloropropane	96-12-8	--	--	0.0006	U	0.0006	U	0.0009	U
Dibromochloromethane	124-48-1	--	--	0.0006	U	0.0006	U	0.0009	U
1,2-Dibromoethane	106-93-4	--	--	0.0005	U	0.0005	U	0.0005	U
1,2-Dichlorobenzene	95-50-1	--	0.013	0.0006	U	0.0006	U	0.0006	U
1,3-Dichlorobenzene	541-73-1	--	--	0.0006	U	0.0006	U	0.0009	U
1,4-Dichlorobenzene	106-46-7	--	0.11	0.0005	U	0.0005	U	0.0005	U
Dichlorodifluoromethane	75-71-8	--	--	0.0007	U	0.0007	U	0.0007	U
1,1-Dichloroethane	75-34-3	--	--	0.0006	U	0.0006	U	0.0006	U
1,2-Dichloroethane	107-06-2	--	--	0.0007	U	0.0007	U	0.0007	U
1,1-Dichloroethene	75-35-4	--	--	0.0006	U	0.0006	U	0.0006	U
1,2-Dichloropropane	78-87-5	--	--	0.0006	U	0.0006	U	0.0006	U
1,3-Dichloropropene (total)	542-75-6	--	--	0.001	U	0.001	U	0.002	U
Ethylbenzene	100-41-4	1.4	--	0.0005	U	0.0005	U	0.0005	U
2-Hexanone	591-78-6	--	--	0.001	U	0.001	U	0.001	U
Isopropylbenzene	98-82-8	--	--	0.0005	U	0.0005	U	0.0005	U
Methyl Acetate	79-20-9	--	--	0.001	U	0.001	U	0.001	U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIV
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-5/0.5-SED-WCBG-5/2.0-SED-WCBG-5/2.0-SED-WCBG-6/0.5-SED-WCBG-6/2.0-SED-WCBG-7/0.5-
 1.0 2.5(A) 2.5(B) 1.0 2.5 1.0(A)
 Date Sampled: 10/18/2019 10/18/2019 10/18/2019 10/16/2019 10/16/2019 10/16/2019
 Depth (ft): 0.5-1 2-2.5 2-2.5 0.5-1 2-2.5 0.5-1
 LAB Sample ID: 1178615 1178616 1178617 1176402 1176403 1176395
 LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M																	
Methyl Tert Butyl Ether (MTBE)	1634-04-4	--	--	0.0006	U	0.0006	U	0.0006	U	0.0009	U	0.038	U	0.001	U					
4-methyl-2-pentanone (MIBK)	108-10-1	--	--	0.001	U	0.001	U	0.001	U	0.002	U	0.076	U	0.002	U					
Methylcyclohexane	108-87-2	--	--	0.0007	U	0.0007	U	0.0007	U	0.003	J	0.046	U	0.001	U					
Methylene chloride	75-09-2	--	--	0.002	U	0.002	U	0.002	U	0.004	U	0.15	U	0.004	U					
Styrene	100-42-5	--	--	0.0005	U	0.0005	U	0.0005	U	0.0007	U	0.03	U	0.0008	U					
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.0005	U	0.0005	U	0.0005	U	0.0007	U	0.03	U	0.0008	U					
Tetrachloroethene	127-18-4	0.45	--	0.0006	U	0.0006	U	0.0006	U	0.0009	U	0.038	U	0.001	U					
Toluene	108-88-3	2.5	--	0.0007	U	0.0007	U	0.0007	U	0.001	U	0.046	U	0.001	J					
trans-1,2-Dichloroethene	156-60-5	--	--	0.0006	U	0.0006	U	0.0006	U	0.0009	U	0.038	U	0.001	U					
trans-1,3-Dichloropropene	10061-02-6	--	--	0.0006	U	0.0006	U	0.0006	U	0.0009	U	0.038	U	0.001	U					
Freon 113	76-13-1	--	--	0.0007	U	0.0007	U	0.0007	U	0.001	U	0.046	U	0.001	U					
1,2,3-Trichlorobenzene	87-61-6	--	--	0.006	U	0.006	U	0.006	U	0.009	U	0.38	U	0.01	U					
1,1,1-Trichloroethane	71-55-6	--	--	0.0007	U	0.0007	U	0.0007	U	0.001	U	0.046	U	0.001	U					
1,1,2-Trichloroethane	79-00-5	--	--	0.0006	U	0.0006	U	0.0006	U	0.0009	U	0.038	U	0.001	U					
Trichloroethene	79-01-6	1.6	--	0.0006	U	0.001	J	0.0006	U	0.0009	U	0.038	U	0.001	U					
Trichlorofluoromethane	75-69-4	--	--	0.0008	U	0.0009	U	0.0008	U	0.001	U	0.053	U	0.001	U					
1,2,4-Trichlorobenzene	120-82-1	--	0.0048	0.006	U	0.006	U	0.006	U	0.009	U	0.38	U	0.01	U					
Vinyl Chloride	75-01-4	--	--	0.0007	U	0.0007	U	0.0007	U	0.001	U	0.046	U	0.001	U					
m,p-Xylene	179601-23-1	--	--	0.001	U	0.001	U	0.001	U	0.002	U	0.076	U	0.002	U					
o-Xylene	95-47-6	--	--	0.0005	U	0.0005	U	0.0005	U	0.0007	U	0.03	U	0.0008	U					
Xylenes (total)	1330-20-7	0.12	--	ND		ND		ND		ND		ND		ND		ND		ND		
Total VOC TIC	SRP170	--	--	ND	U	ND	U	ND	U	0.77	J	13	J	ND	U					

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIV
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-7/0.5-SED-WCBG-7/2.0-SED-WCBG-8/0.5-SED-WCBG-8/2.0-
 1.0(B) 2.5 1.0 2.5
 Date Sampled: 10/16/2019 10/16/2019 10/18/2019 10/18/2019
 Depth (ft): 0.5-1 2-2.5 0.5-1 2-2.5
 LAB Sample ID: 1176396 1176397 1178612 1178613
 LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M						
Acetone	67-64-1	--	--	0.032	J	0.008	J	0.049	0.013 J
Benzene	71-43-2	0.34	--	0.001	U	0.0006	U	0.0008	U 0.0007 U
Bromochloromethane	74-97-5	--	--	0.001	U	0.0007	U	0.001	U 0.0008 U
Bromodichloromethane	75-27-4	--	--	0.0008	U	0.0005	U	0.0007	U 0.0005 U
Bromoform	75-25-2	--	--	0.01	U	0.006	U	0.008	U 0.007 U
Bromomethane	74-83-9	--	--	0.001	U	0.0008	U	0.001	U 0.0009 U
2-Butanone (MEK)	78-93-3	--	--	0.005	J	0.001	U	0.021	0.004 J
Carbon Disulfide	75-15-0	--	--	0.001	U	0.0007	U	0.003	J 0.0008 U
Carbon tetrachloride	56-23-5	--	--	0.001	U	0.0006	U	0.0008	U 0.0007 U
Chlorobenzene	108-90-7	--	--	0.001	U	0.0006	U	0.0008	U 0.0007 U
Chloroethane	75-00-3	--	--	0.002	U	0.001	U	0.002	U 0.001 U
Chloroform	67-66-3	--	--	0.001	U	0.0007	U	0.001	U 0.0008 U
Chloromethane	74-87-3	--	--	0.001	U	0.0007	U	0.001	U 0.0008 U
cis-1,2-Dichloroethene	156-59-2	--	--	0.001	U	0.0006	U	0.0008	U 0.0007 U
cis-1,3-Dichloropropene	10061-01-5	--	--	0.0008	U	0.0005	U	0.0007	U 0.0005 U
Cyclohexane	110-82-7	--	--	0.001	U	0.0006	U	0.0008	U 0.0007 U
1,2-Dibromo-3-chloropropane	96-12-8	--	--	0.001	U	0.0006	U	0.0008	U 0.0007 U
Dibromochloromethane	124-48-1	--	--	0.001	U	0.0006	U	0.0008	U 0.0007 U
1,2-Dibromoethane	106-93-4	--	--	0.0008	U	0.0005	U	0.0007	U 0.0005 U
1,2-Dichlorobenzene	95-50-1	--	0.013	0.001	U	0.0006	U	0.0008	U 0.0007 U
1,3-Dichlorobenzene	541-73-1	--	--	0.001	U	0.0006	U	0.0008	U 0.0007 U
1,4-Dichlorobenzene	106-46-7	--	0.11	0.0008	U	0.0005	U	0.0007	U 0.0005 U
Dichlorodifluoromethane	75-71-8	--	--	0.001	U	0.0007	U	0.001	U 0.0008 U
1,1-Dichloroethane	75-34-3	--	--	0.001	U	0.0006	U	0.0008	U 0.0007 U
1,2-Dichloroethane	107-06-2	--	--	0.001	U	0.0007	U	0.001	U 0.0008 U
1,1-Dichloroethene	75-35-4	--	--	0.001	U	0.0006	U	0.0008	U 0.0007 U
1,2-Dichloropropane	78-87-5	--	--	0.001	U	0.0006	U	0.0008	U 0.0007 U
1,3-Dichloropropene (total)	542-75-6	--	--	0.002	U	0.001	U	0.002	U 0.001 U
Ethylbenzene	100-41-4	1.4	--	0.0008	U	0.0005	U	0.0008	J 0.0005 U
2-Hexanone	591-78-6	--	--	0.002	U	0.001	U	0.002	U 0.001 U
Isopropylbenzene	98-82-8	--	--	0.0008	U	0.0005	U	0.0007	U 0.0005 U
Methyl Acetate	79-20-9	--	--	0.002	U	0.001	U	0.002	U 0.001 U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIV
Summary of Volatile Organic Compounds (VOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-7/0.5-SED-WCBG-7/2.0-SED-WCBG-8/0.5-SED-WCBG-8/2.0-
 1.0(B) 2.5 1.0 2.5
 Date Sampled: 10/16/2019 10/16/2019 10/18/2019 10/18/2019
 Depth (ft): 0.5-1 2-2.5 0.5-1 2-2.5
 LAB Sample ID: 1176396 1176397 1178612 1178613
 LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M							
Methyl Tert Butyl Ether (MTBE)	1634-04-4	--	--	0.001	U	0.0006	U	0.0008	U	0.0007 U
4-methyl-2-pentanone (MIBK)	108-10-1	--	--	0.002	U	0.001	U	0.002	U	0.001 U
Methylcyclohexane	108-87-2	--	--	0.001	U	0.0007	U	0.006	J	0.0008 U
Methylene chloride	75-09-2	--	--	0.004	U	0.002	U	0.003	U	0.003 U
Styrene	100-42-5	--	--	0.0008	U	0.0005	U	0.0007	U	0.0005 U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.0008	U	0.0005	U	0.0007	U	0.0005 U
Tetrachloroethene	127-18-4	0.45	--	0.001	U	0.0006	U	0.0008	U	0.0007 U
Toluene	108-88-3	2.5	--	0.001	U	0.0007	U	0.001	U	0.0008 U
trans-1,2-Dichloroethene	156-60-5	--	--	0.001	U	0.0006	U	0.0008	U	0.0007 U
trans-1,3-Dichloropropene	10061-02-6	--	--	0.001	U	0.0006	U	0.0008	U	0.0007 U
Freon 113	76-13-1	--	--	0.001	U	0.0007	U	0.001	U	0.0008 U
1,2,3-Trichlorobenzene	87-61-6	--	--	0.01	U	0.006	U	0.008	U	0.007 U
1,1,1-Trichloroethane	71-55-6	--	--	0.001	U	0.0007	U	0.001	U	0.0008 U
1,1,2-Trichloroethane	79-00-5	--	--	0.001	U	0.0006	U	0.0008	U	0.0007 U
Trichloroethene	79-01-6	1.6	--	0.001	U	0.0006	U	0.0008	U	0.0007 U
Trichlorofluoromethane	75-69-4	--	--	0.001	U	0.0008	U	0.001	U	0.0009 U
1,2,4-Trichlorobenzene	120-82-1	--	0.0048	0.01	U	0.006	U	0.008	U	0.007 U
Vinyl Chloride	75-01-4	--	--	0.001	U	0.0007	U	0.001	U	0.0008 U
m,p-Xylene	179601-23-1	--	--	0.002	U	0.001	U	0.002	U	0.001 U
o-Xylene	95-47-6	--	--	0.0008	U	0.0005	U	0.0007	U	0.0005 U
Xylenes (total)	1330-20-7	0.12	--	ND		ND		ND		ND
Total VOC TIC	SRP170	--	--	ND	U	ND	U	4.2	J	0.09 J

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XIX
Physical and Miscellaneous Parameters
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.:	SED-WCBG-1/0.0-0.5	SED-WCBG-2/0.0-0.5	SED-WCBG-3/0.0-0.5	SED-WCBG-4/0.0-0.5	SED-WCBG-5/0.0-0.5	SED-WCBG-6/0.0-0.5	SED-WCBG-7/0.0-0.5	SED-WCBG-8/0.0-0.5
Date Sampled:	10/15/2019	10/18/2019	10/15/2019	10/16/2019	10/18/2019	10/16/2019	10/16/2019	10/18/2019
Depth (ft):	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
LAB Sample ID:	1175345	1178618	1175341	1176398	1178614	1176401	1176394	1178611
LAB:	Eurofins Lancaster							
Parameter	Units							
Grain Size 75 mm	% Passing	100		100		100		100
Grain Size 37.5 mm	% Passing	49.5		100		73.3		100
Grain Size 19 mm	% Passing	35.3		97.1		100		100
Grain Size 4.75 mm	% Passing	29.5		78.4		99.8		99.4
Grain Size 3.35 mm	% Passing	27.4		70.1		99.8		99
Grain Size 2.36 mm	% Passing	24.6		63.4		99.6		97.9
Grain Size 1.18 mm	% Passing	22.5		57.4		99.2		97.3
Grain Size 0.6mm	% Passing	19.8		48.9		98.5		95.5
Grain Size 0.3 mm	% Passing	15.6		35.7		96.8		86.7
Grain Size 0.15 mm	% Passing	12.8		27.5		86.3		56
Grain Size 0.075 mm	% Passing	11.6		25.9		66.8		39.7
Grain Size 0.064 mm	% Passing	11		25		63		37
Grain Size 0.05 mm	% Passing	10		24.5		56		33
Grain Size 0.02 mm	% Passing	7		21		42		22
Grain Size 0.005 mm	% Passing	3		8		27		14
Grain Size 0.002 mm	% Passing	2		5		21		8.5
Grain Size 0.001 mm	% Passing	1		2		18.5		6
Percent Gravel	%	70.5		21.6		0 U		J
Percent Sand	%	17.9		52.5		33		59.8
Percent Silt	%	8.6		17.9		39.8		25.7
Percent Clay	%	3		8		27		14
pH	su	7.79		8.12		7.59		6.67
Total Organic Carbon	mg/kg	17700		19200		34100		23500

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

U = Compound not detected above MDL

Table A-XV
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.:	SED-10-A/2.0-2.5 SED-10-B/2.0-2.5 SED-10-C/2.0-2.5 SED-WCBG-1/0.0-SED-WCBG-1/2.0-SED-WCBG-2/0-0.5						2.5	0.5
Date Sampled:	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/18/2019	
Depth (ft):	2-2.5	2-2.5	2-2.5	0-0.5	2-2.5		0-0.5	
LAB Sample ID:	1175350	1175353	1175340	1175345	1175347	1178618		
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M										
Acenaphthene	83-32-9	0.016	0.5	0.004	U	0.004	U	0.004	U	0.56		0.005	U
Acenaphthylene	208-96-8	0.044	0.64	0.004	U	0.004	U	0.004	U	0.51		0.005	U
Acetophenone	98-86-2	--	--	0.02	U	0.02	U	0.021	U	0.25	U	0.027	U
Anthracene	120-12-7	0.085	1.1	0.025		0.014	J	0.008	J	5.1		0.053	J
Atrazine	1912-24-9	--	--	0.24	U	0.24	U	0.25	U	3	U	0.32	U
Benzaldehyde	100-52-7	--	--	0.078	U	0.08	U	0.085	U	1	U	0.11	U
Benzo(a)pyrene	50-32-8	0.43	1.6	0.11		0.053		0.019	J	14		0.63	
Benzo(a)anthracene	56-55-3	0.261	1.6	0.069		0.059		0.017	J	16		0.4	
Benzo(b)fluoranthene	205-99-2	--	1.8	0.091		0.077		0.024		18		0.27	
Benzo(ghi)perylene	191-24-2	0.17	--	0.13		0.04		0.014	J	8.5		0.52	
Benzo(k)fluoranthene	207-08-9	0.24	--	0.024		0.029		0.014	J	6.3		0.084	
1,1-Biphenyl	92-52-4	--	--	0.02	U	0.02	U	0.021	U	0.25	U	0.027	U
Bis(2-Chloroethoxy)methane	111-91-1	--	--	0.02	U	0.02	U	0.021	U	0.25	U	0.027	U
bis(2-Chloroethyl)ether	111-44-4	--	--	0.027	U	0.028	U	0.03	U	0.35	U	0.037	U
bis(2-Chloroisopropyl)ether	108-60-1	--	--	0.024	U	0.024	U	0.025	U	0.3	U	0.032	U
bis(2-Ethylhexyl)phthalate	117-81-7	0.18216	2.64651	0.23		0.08	U	0.085	U	1	U	0.11	U
4-Bromophenyl-phenylether	101-55-3	--	--	0.027	U	0.028	U	0.03	U	0.35	U	0.037	U
Butyl benzyl phthalate	85-68-7	--	0.063	0.078	U	0.42		0.085	U	1	U	0.11	U
Caprolactam	105-60-2	--	--	0.039	U	0.04	U	0.042	U	0.51	U	0.053	U
Carbazole	86-74-8	--	--	0.02	U	0.02	U	0.021	U	0.68		0.027	U
2-Chloronaphthalene	91-58-7	--	--	0.008	U	0.008	U	0.008	U	0.1	U	0.011	U
2-Chlorophenol	95-57-8	--	0.008	0.02	U	0.02	U	0.021	U	0.25	U	0.027	U
4-Chlorophenyl-phenylether	7005-72-3	--	--	0.024	U	0.024	U	0.025	U	0.3	U	0.032	U
Chrysene	218-01-9	0.384	2.8	0.11		0.067		0.017	J	14		0.68	
Dibenz(a,h)anthracene	53-70-3	0.063	0.26	0.019	J	0.008	U	0.008	U	2		0.085	
Dibenzo furan	132-64-9	--	--	0.02	U	0.02	U	0.021	U	0.5	J	0.027	U
3,3'-Dichlorobenzidine	91-94-1	--	--	0.12	U	0.12	U	0.13	U	1.5	U	0.16	U
2,4-Dichlorophenol	120-83-2	--	0.005	0.024	U	0.024	U	0.025	U	0.3	U	0.032	U
Diethyl phthalate	84-66-2	--	0.006	0.078	U	0.08	U	0.085	U	1	U	0.11	U
2,4-Dimethyl phenol	105-67-9	--	--	0.035	U	0.036	U	0.038	U	0.46	U	0.048	U
Dimethyl phthalate	131-11-3	--	--	0.078	U	0.08	U	0.085	U	1	U	0.11	U
Di-n-butyl phthalate	84-74-2	--	0.058	0.078	U	0.08	U	0.085	U	1	U	0.11	U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XV
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-10-A/2.0-2.5 SED-10-B/2.0-2.5 SED-10-C/2.0-2.5 SED-WCBG-1/0.0-SED-WCBG-1/2.0-SED-WCBG-2/0-
0.5 2.5 0.5
Date Sampled: 10/15/2019 10/15/2019 10/15/2019 10/15/2019 10/15/2019 10/18/2019
Depth (ft): 2-2.5 2-2.5 2-2.5 0-0.5 2-2.5 0-0.5
LAB Sample ID: 1175350 1175353 1175340 1175345 1175347 1178618
LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M																	
4,6-Dinitro-2-methylphenol	534-52-1	--	--	0.27	U	0.28	U	0.3	U	3.5	U	0.37	U	0.33	U					
2,4-Dinitrophenol	51-28-5	--	--	0.39	U	0.4	U	0.42	U	5.1	U	0.53	U	0.48	U					
Dinitrotoluene (2,4-2,6- mixture)	25321-14-6	--	--	ND		ND		ND		ND		ND		ND						
2,4-Dinitrotoluene	121-14-2	--	--	0.078	U	0.08	U	0.085	U	1	U	0.11	U	0.095	U					
2,6-Dinitrotoluene	606-20-2	--	--	0.027	U	0.028	U	0.03	U	0.35	U	0.037	U	0.033	U					
Di-n-octyl phthalate	117-84-0	--	--	0.078	U	0.08	U	0.085	U	1	U	0.11	U	0.095	U					
1,4-Dioxane	123-91-1	--	--	0.12	U	0.12	U	0.13	U	1.5	U	0.16	U	0.14	U					
Fluoranthene	206-44-0	0.6	5.1	0.08		0.1		0.029		32		0.22		0.066						
Fluorene	86-73-7	0.019	0.54	0.004	U	0.004	U	0.007	J	1.4		0.009	J	0.005	U					
Hexachlorobenzene	118-74-1	0.02	--	0.008	U	0.008	U	0.008	U	0.1	U	0.011	U	0.01	U					
Hexachlorobutadiene	87-68-3	--	0.0013	0.043	U	0.044	U	0.047	U	0.56	U	0.058	U	0.052	U					
Hexachlorocyclopentadiene	77-47-4	--	--	0.24	U	0.24	U	0.25	U	3	U	0.32	U	0.29	U					
Hexachloroethane	67-72-1	--	0.073	0.039	U	0.04	U	0.042	U	0.51	U	0.053	U	0.048	U					
High Molecular Weight PAHs	SRP420	--	--	0.724		0.457		0.152		108.4		3.319		0.245						
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	--	0.041		0.035		0.009	J	6.6		0.14		0.017	J					
Isophorone	78-59-1	--	--	0.02	U	0.02	U	0.021	U	0.25	U	0.027	U	0.024	U					
Low Molecular Weight PAHs	SRP419	--	--	0.105		0.149		0.1		47.956		0.355		0.095						
2-Methylnaphthalene	91-57-6	0.07	0.67	0.004	U	0.004	U	0.01	J	0.056	J	0.005	U	0.005	U					
2-Methylphenol	95-48-7	--	--	0.02	U	0.02	U	0.021	U	0.25	U	0.027	U	0.024	U					
3&4-Methylphenol	65794-96-9	--	--	ND		ND		0.025		ND		ND		ND						
4-Methylphenol	106-44-5	--	--	0.02	U	0.02	U	0.025	J	0.25	U	0.027	U	0.024	U					
Naphthalene	91-20-3	0.16	2.1	0.008	U	0.008	U	0.026		0.13	J	0.011	U	0.01	U					
2-Nitroaniline	88-74-4	--	--	0.02	U	0.02	U	0.021	U	0.25	U	0.027	U	0.024	U					
3-Nitroaniline	99-09-2	--	--	0.078	U	0.08	U	0.085	U	1	U	0.11	U	0.095	U					
4-Nitroaniline	100-01-6	--	--	0.078	U	0.08	U	0.085	U	1	U	0.11	U	0.095	U					
Nitrobenzene	98-95-3	--	--	0.031	U	0.032	U	0.034	U	0.41	U	0.043	U	0.038	U					
2-Nitrophenol	88-75-5	--	--	0.031	U	0.032	U	0.034	U	0.41	U	0.043	U	0.038	U					
4-Nitrophenol	100-02-7	--	--	0.2	U	0.2	U	0.21	U	2.5	U	0.27	U	0.24	U					
n-Nitrosodi-n-propylamine	621-64-7	--	--	0.027	U	0.028	U	0.03	U	0.35	U	0.037	U	0.033	U					
n-Nitrosodiphenylamine	86-30-6	--	--	0.02	U	0.02	U	0.021	U	0.25	U	0.027	U	0.024	U					
p-Chloroaniline	106-47-8	--	--	0.039	U	0.04	U	0.042	U	0.51	U	0.053	U	0.048	U					
p-Chloro-m-cresol	59-50-7	--	--	0.027	U	0.028	U	0.03	U	0.35	U	0.037	U	0.033	U					

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U = Compound not detected above MDL

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Table A-XV
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.:	SED-10-A/2.0-2.5	SED-10-B/2.0-2.5	SED-10-C/2.0-2.5	SED-WCBG-1/0.0-SED-WCBG-1/2.0-SED-WCBG-2/0.0-	0.5	2.5	0.5
Date Sampled:	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/18/2019	
Depth (ft):	2-2.5	2-2.5	2-2.5	0-0.5	2-2.5	0-0.5	
LAB Sample ID:	1175350	1175353	1175340	1175345	1175347	1178618	
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M																
Pentachlorophenol	87-86-5	--	0.017	0.078	U	0.08	U	0.085	U	1	U	0.11	U	0.095	U				
Phenanthrene	85-01-8	0.24	1.5	0.004	U	0.035		0.02	J	8.2		0.073		0.022	J				
Phenol	108-95-2	--	0.13	0.02	U	0.02	U	0.021	U	0.25	U	0.027	U	0.024	U				
Pyrene	129-00-0	0.665	2.6	0.13		0.097		0.038		23		0.51		0.059					
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	0.02	U	0.02	U	0.021	U	0.25	U	0.027	U	0.024	U				
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	0.078	U	0.08	U	0.085	U	1	U	0.11	U	0.095	U				
Total PAHs	130498-29-2	4	45	0.829		0.606		0.252		156.356		3.674		0.34					
2,4,5-Trichlorophenol	95-95-4	--	0.003	0.035	U	0.036	U	0.038	U	0.46	U	0.048	U	0.043	U				
2,4,6-Trichlorophenol	88-06-2	--	0.006	0.031	U	0.032	U	0.034	U	0.41	U	0.043	U	0.038	U				
Total SVOC TIC	SRP171	--	--	15	J	2.7	J	72	J	100	J	19	J	5.1	JB				
Total VOC and SVOC TICs	SRP351	--	--	15		2.7		72		NA		19		NA					

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ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XV
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-2/2.0-SED-WCBG-3/0.0-SED-WCBG-3/2.5-SED-WCBG-4/0.0-SED-WCBG-4/1.0-SED-WCBG-5/0.0-
2.5 0.5 3.0 0.5 1.5 0.5
Date Sampled: 10/18/2019 10/15/2019 10/15/2019 10/16/2019 10/16/2019 10/18/2019
Depth (ft): 2-2.5 0-0.5 2.5-3 0-0.5 1-1.5 0-0.5
LAB Sample ID: 1178620 1175341 1175344 1176398 1176400 1178614
LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M												
Acenaphthene	83-32-9	0.016	0.5	0.004	U	0.026	U	0.24		0.023	U	0.043	U	0.004	U
Acenaphthylene	208-96-8	0.044	0.64	0.004	U	0.026	U	0.044	U	0.023	U	0.043	U	0.016	J
Acetophenone	98-86-2	--	--	0.019	U	0.13	U	0.22	U	0.12	U	0.21	U	0.02	U
Anthracene	120-12-7	0.085	1.1	0.004	U	0.12	J	1.5		0.029	J	0.043	U	0.021	
Atrazine	1912-24-9	--	--	0.23	U	1.5	U	2.6	U	1.4	U	2.6	U	0.24	U
Benzaldehyde	100-52-7	--	--	0.076	U	0.51	U	0.87	U	0.47	U	0.86	U	0.081	U
Benzo(a)pyrene	50-32-8	0.43	1.6	0.007	J	0.9		1.7		0.14		0.043	U	0.19	
Benzo(a)anthracene	56-55-3	0.261	1.6	0.008	U	0.65		2.4		0.099	J	0.086	U	0.16	
Benzo(b)fluoranthene	205-99-2	--	1.8	0.008	J	1.3		2		0.11	J	0.043	U	0.2	
Benzo(ghi)perylene	191-24-2	0.17	--	0.006	J	0.74		1.1		0.11	J	0.043	U	0.16	
Benzo(k)fluoranthene	207-08-9	0.24	--	0.005	J	0.54		0.82		0.023	U	0.043	U	0.08	
1,1-Biphenyl	92-52-4	--	--	0.019	U	0.13	U	0.22	U	0.12	U	0.21	U	0.02	U
Bis(2-Chloroethoxy)methane	111-91-1	--	--	0.019	U	0.13	U	0.22	U	0.12	U	0.21	U	0.02	U
bis(2-Chloroethyl)ether	111-44-4	--	--	0.027	U	0.18	U	0.31	U	0.16	U	0.3	U	0.028	U
bis(2-Chloroisopropyl)ether	108-60-1	--	--	0.023	U	0.15	U	0.26	U	0.14	U	0.26	U	0.024	U
bis(2-Ethylhexyl)phthalate	117-81-7	0.18216	2.64651	0.076	U	4.1		2.7		0.47	U	0.86	U	0.12	J
4-Bromophenyl-phenylether	101-55-3	--	--	0.027	U	0.18	U	0.31	U	0.16	U	0.3	U	0.028	U
Butyl benzyl phthalate	85-68-7	--	0.063	0.076	U	0.51	U	0.87	U	0.47	U	0.86	U	0.081	U
Caprolactam	105-60-2	--	--	0.038	U	0.26	U	0.44	U	0.23	U	0.43	U	0.04	U
Carbazole	86-74-8	--	--	0.019	U	0.13	U	0.22	U	0.12	U	0.21	U	0.02	U
2-Chloronaphthalene	91-58-7	--	--	0.008	U	0.051	U	0.087	U	0.047	U	0.086	U	0.008	U
2-Chlorophenol	95-57-8	--	0.008	0.019	U	0.13	U	0.22	U	0.12	U	0.21	U	0.02	U
4-Chlorophenyl-phenylether	7005-72-3	--	--	0.023	U	0.15	U	0.26	U	0.14	U	0.26	U	0.024	U
Chrysene	218-01-9	0.384	2.8	0.009	J	0.55		2.1		0.087	J	0.043	U	0.18	
Dibenz(a,h)anthracene	53-70-3	0.063	0.26	0.008	U	0.15		0.28		0.047	U	0.086	U	0.038	
Dibenzofuran	132-64-9	--	--	0.019	U	0.13	U	0.22	U	0.12	U	0.21	U	0.02	U
3,3'-Dichlorobenzidine	91-94-1	--	--	0.11	U	0.77	U	1.3	U	0.7	U	1.3	U	0.12	U
2,4-Dichlorophenol	120-83-2	--	0.005	0.023	U	0.15	U	0.26	U	0.14	U	0.26	U	0.024	U
Diethyl phthalate	84-66-2	--	0.006	0.076	U	0.51	U	0.87	U	0.47	U	0.86	U	0.081	U
2,4-Dimethyl phenol	105-67-9	--	--	0.034	U	0.23	U	0.39	U	0.21	U	0.39	U	0.036	U
Dimethyl phthalate	131-11-3	--	--	0.076	U	0.51	U	0.87	U	0.47	U	0.86	U	0.081	U
Di-n-butyl phthalate	84-74-2	--	0.058	0.076	U	0.51	U	0.87	U	0.47	U	0.86	U	0.081	U

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Table A-XV
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-2/2.0-SED-WCBG-3/0.0-SED-WCBG-3/2.5-SED-WCBG-4/0.0-SED-WCBG-4/1.0-SED-WCBG-5/0.0
 2.5 0.5 3.0 0.5 1.5 0.5
 Date Sampled: 10/18/2019 10/15/2019 10/15/2019 10/16/2019 10/16/2019 10/18/2019
 Depth (ft): 2-2.5 0-0.5 2.5-3 0-0.5 1-1.5 0-0.5
 LAB Sample ID: 1178620 1175341 1175344 1176398 1176400 1178614
 LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M												
4,6-Dinitro-2-methylphenol	534-52-1	--	--	0.27	U	1.8	U	3.1	U	1.6	U	3	U	0.28	U
2,4-Dinitrophenol	51-28-5	--	--	0.38	U	2.6	U	4.4	U	2.3	U	4.3	U	0.4	U
Dinitrotoluene (2,4,2,6- mixture)	25321-14-6	--	--	ND											
2,4-Dinitrotoluene	121-14-2	--	--	0.076	U	0.51	U	0.87	U	0.47	U	0.86	U	0.081	U
2,6-Dinitrotoluene	606-20-2	--	--	0.027	U	0.18	U	0.31	U	0.16	U	0.3	U	0.028	U
Di-n-octyl phthalate	117-84-0	--	--	0.076	U	0.51	U	0.87	U	0.47	U	0.86	U	0.081	U
1,4-Dioxane	123-91-1	--	--	0.11	U	0.77	U	1.3	U	0.7	U	1.3	U	0.12	U
Fluoranthene	206-44-0	0.6	5.1	0.011	J	1.5		4.9		0.17		0.099	J	0.21	
Fluorene	86-73-7	0.019	0.54	0.004	U	0.026	U	0.19	J	0.023	U	0.043	U	0.004	U
Hexachlorobenzene	118-74-1	0.02	--	0.008	U	0.051	U	0.087	U	0.047	U	0.086	U	0.008	U
Hexachlorobutadiene	87-68-3	--	0.0013	0.042	U	0.28	U	0.48	U	0.26	U	0.47	U	0.045	U
Hexachlorocyclopentadiene	77-47-4	--	--	0.23	U	1.5	U	2.6	U	1.4	U	2.6	U	0.24	U
Hexachloroethane	67-72-1	--	0.073	0.038	U	0.26	U	0.44	U	0.23	U	0.43	U	0.04	U
High Molecular Weight PAHs	SRP420	--	--	0.046		7.25		14.91		0.76		0.12		1.422	
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	--	0.004	U	0.62		0.81		0.064	J	0.043	U	0.094	
Isophorone	78-59-1	--	--	0.019	U	0.13	U	0.22	U	0.12	U	0.21	U	0.02	U
Low Molecular Weight PAHs	SRP419	--	--	0.011		1.838		7.329		0.269		0.099		0.312	
2-Methylnaphthalene	91-57-6	0.07	0.67	0.004	U	0.028	J	0.059	J	0.023	U	0.043	U	0.007	J
2-Methylphenol	95-48-7	--	--	0.019	U	0.13	U	0.22	U	0.12	U	0.21	U	0.02	U
3&4-Methylphenol	65794-96-9	--	--	ND											
4-Methylphenol	106-44-5	--	--	0.019	U	0.13	U	0.22	U	0.12	U	0.21	U	0.02	U
Naphthalene	91-20-3	0.16	2.1	0.008	U	0.051	U	0.087	U	0.047	U	0.086	U	0.008	U
2-Nitroaniline	88-74-4	--	--	0.019	U	0.13	U	0.22	U	0.12	U	0.21	U	0.02	U
3-Nitroaniline	99-09-2	--	--	0.076	U	0.51	U	0.87	U	0.47	U	0.86	U	0.081	U
4-Nitroaniline	100-01-6	--	--	0.076	U	0.51	U	0.87	U	0.47	U	0.86	U	0.081	U
Nitrobenzene	98-95-3	--	--	0.03	U	0.2	U	0.35	U	0.19	U	0.34	U	0.032	U
2-Nitrophenol	88-75-5	--	--	0.03	U	0.2	U	0.35	U	0.19	U	0.34	U	0.032	U
4-Nitrophenol	100-02-7	--	--	0.19	U	1.3	U	2.2	U	1.2	U	2.1	U	0.2	U
n-Nitrosodi-n-propylamine	621-64-7	--	--	0.027	U	0.18	U	0.31	U	0.16	U	0.3	U	0.028	U
n-Nitrosodiphenylamine	86-30-6	--	--	0.019	U	0.13	U	0.22	U	0.12	U	0.21	U	0.02	U
p-Chloroaniline	106-47-8	--	--	0.038	U	0.26	U	0.44	U	0.23	U	0.43	U	0.04	U
p-Chloro-m-cresol	59-50-7	--	--	0.027	U	0.18	U	0.31	U	0.16	U	0.3	U	0.028	U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC = NJDEP Ecological Screening Criteria, March 2005
ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)
ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

ESC ER-M – Saline Water Sediment Effects Range
Bold indicates concentrations above the ESC ER-L

Bold indicates concentrations above the ESC ER-L
Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion

Table A-XV
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-2/2.0-SED-WCBG-3/0.0-SED-WCBG-3/2.5-SED-WCBG-4/0.0-SED-WCBG-4/1.0-SED-WCBG-5/0.0-
2.5 0.5 3.0 0.5 1.5 0.5
Date Sampled: 10/18/2019 10/15/2019 10/15/2019 10/16/2019 10/16/2019 10/18/2019
Depth (ft): 2-2.5 0-0.5 2.5-3 0-0.5 1-1.5 0-0.5
LAB Sample ID: 1178620 1175341 1175344 1176398 1176400 1178614
LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M												
Pentachlorophenol	87-86-5	--	0.017	0.076	U	0.51	U	0.87	U	0.47	U	0.86	U	0.081	U
Phenanthrene	85-01-8	0.24	1.5	0.004	U	0.19		0.44		0.07	J	0.043	U	0.058	
Phenol	108-95-2	--	0.13	0.019	U	0.13	U	0.22	U	0.12	U	0.21	U	0.02	U
Pyrene	129-00-0	0.665	2.6	0.011	J	1.8		3.7		0.15		0.12	J	0.32	
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	0.019	U	0.13	U	0.22	U	0.12	U	0.21	U	0.02	U
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	0.076	U	0.51	U	0.87	U	0.47	U	0.86	U	0.081	U
Total PAHs	130498-29-2	4	45	0.057		9.088		22.239		1.029		0.219		1.734	
2,4,5-Trichlorophenol	95-95-4	--	0.003	0.034	U	0.23	U	0.39	U	0.21	U	0.39	U	0.036	U
2,4,6-Trichlorophenol	88-06-2	--	0.006	0.03	U	0.2	U	0.35	U	0.19	U	0.34	U	0.032	U
Total SVOC TIC	SRP171	--	--	1.7	JB	13	J	57	J	54	J	15	J	4.9	J
Total VOC and SVOC TICs	SRP351	--	--	1.7		NA		58.5		NA		15		NA	

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XV
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.:	SED-WCBG-5/2.0-SED-WCBG-5/2.0-SED-WCBG-6/0.0-SED-WCBG-6/2.0-SED-WCBG-7/0.0-SED-WCBG-7/2.0-					
	2.5(A)	2.5(B)	0.5	2.5	0.5	2.5
Date Sampled:	10/18/2019	10/18/2019	10/16/2019	10/16/2019	10/16/2019	10/16/2019
Depth (ft):	2-2.5	2-2.5	0-0.5	2-2.5	0-0.5	2-2.5
LAB Sample ID:	1178616	1178617	1176401	1176403	1176394	1176397
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M	2.5(A)	2.5(B)	0.5	2.5	0.5	2.5	0.5	2.5
Acenaphthene	83-32-9	0.016	0.5	0.004	U	0.004	U	0.056	U	0.095	U
Acenaphthylene	208-96-8	0.044	0.64	0.004	U	0.004	U	0.056	U	0.095	U
Acetophenone	98-86-2	--	--	0.021	U	0.021	U	0.28	U	0.48	U
Anthracene	120-12-7	0.085	1.1	0.004	J	0.004	U	0.2	J	0.18	J
Atrazine	1912-24-9	--	--	0.25	U	0.25	U	3.4	U	5.7	U
Benzaldehyde	100-52-7	--	--	0.083	U	0.082	U	1.1	U	1.9	U
Benzo(a)pyrene	50-32-8	0.43	1.6	0.017	J	0.009	J	1		0.41	J
Benzo(a)anthracene	56-55-3	0.261	1.6	0.021		0.01	J	1		0.45	J
Benzo(b)fluoranthene	205-99-2	--	1.8	0.021		0.014	J	1.2		0.55	
Benzo(ghi)perylene	191-24-2	0.17	--	0.012	J	0.009	J	1.2		0.095	U
Benzo(k)fluoranthene	207-08-9	0.24	--	0.01	J	0.004	U	0.34		0.095	U
1,1-Biphenyl	92-52-4	--	--	0.021	U	0.021	U	0.28	U	0.48	U
Bis(2-Chloroethoxy)methane	111-91-1	--	--	0.021	U	0.021	U	0.28	U	0.48	U
bis(2-Chloroethyl)ether	111-44-4	--	--	0.029	U	0.029	U	0.39	U	0.67	U
bis(2-Chloroisopropyl)ether	108-60-1	--	--	0.025	U	0.025	U	0.34	U	0.57	U
bis(2-Ethylhexyl)phthalate	117-81-7	0.18216	2.64651	0.083	U	0.082	U	4.1		1.9	U
4-Bromophenyl-phenylether	101-55-3	--	--	0.029	U	0.029	U	0.39	U	0.67	U
Butyl benzyl phthalate	85-68-7	--	0.063	0.083	U	0.082	U	1.1	U	1.9	U
Caprolactam	105-60-2	--	--	0.042	U	0.041	U	0.56	U	0.95	U
Carbazole	86-74-8	--	--	0.021	U	0.021	U	0.28	U	0.48	U
2-Chloronaphthalene	91-58-7	--	--	0.008	U	0.008	U	0.11	U	0.19	U
2-Chlorophenol	95-57-8	--	0.008	0.021	U	0.021	U	0.28	U	0.48	U
4-Chlorophenyl-phenylether	7005-72-3	--	--	0.025	U	0.025	U	0.34	U	0.57	U
Chrysene	218-01-9	0.384	2.8	0.016	J	0.007	J	0.71		0.61	
Dibenz(a,h)anthracene	53-70-3	0.063	0.26	0.008	U	0.008	U	0.28		0.19	U
Dibenzofuran	132-64-9	--	--	0.021	U	0.021	U	0.28	U	0.48	U
3,3'-Dichlorobenzidine	91-94-1	--	--	0.13	U	0.12	U	1.7	U	2.9	U
2,4-Dichlorophenol	120-83-2	--	0.005	0.025	U	0.025	U	0.34	U	0.57	U
Diethyl phthalate	84-66-2	--	0.006	0.083	U	0.082	U	1.1	U	1.9	U
2,4-Dimethyl phenol	105-67-9	--	--	0.038	U	0.037	U	0.5	U	0.86	U
Dimethyl phthalate	131-11-3	--	--	0.083	U	0.082	U	1.1	U	1.9	U
Di-n-butyl phthalate	84-74-2	--	0.058	0.083	U	0.082	U	1.1	U	1.9	U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XV
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-5/2.0-SED-WCBG-5/2.0-SED-WCBG-6/0.0-SED-WCBG-6/2.0-SED-WCBG-7/0.0-SED-WCBG-7/2.0-
 2.5(A) 2.5(B) 0.5 2.5 0.5 2.5
 Date Sampled: 10/18/2019 10/18/2019 10/16/2019 10/16/2019 10/16/2019 10/16/2019
 Depth (ft): 2-2.5 2-2.5 0-0.5 2-2.5 0-0.5 2-2.5
 LAB Sample ID: 1178616 1178617 1176401 1176403 1176394 1176397
 LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M										
4,6-Dinitro-2-methylphenol	534-52-1	--	--	0.29	U	0.29	U	3.9	U	6.7	U	1.8	U
2,4-Dinitrophenol	51-28-5	--	--	0.42	U	0.41	U	5.6	U	9.5	U	2.5	U
Dinitrotoluene (2,4-2,6- mixture)	25321-14-6	--	--	ND									
2,4-Dinitrotoluene	121-14-2	--	--	0.083	U	0.082	U	1.1	U	1.9	U	0.51	U
2,6-Dinitrotoluene	606-20-2	--	--	0.029	U	0.029	U	0.39	U	0.67	U	0.18	U
Di-n-octyl phthalate	117-84-0	--	--	0.083	U	0.082	U	1.1	U	1.9	U	0.51	U
1,4-Dioxane	123-91-1	--	--	0.13	U	0.12	U	1.7	U	2.9	U	0.76	U
Fluoranthene	206-44-0	0.6	5.1	0.03		0.012	J	0.82		1		0.057	J
Fluorene	86-73-7	0.019	0.54	0.004	U	0.004	U	0.056	U	0.095	U	0.025	U
Hexachlorobenzene	118-74-1	0.02		0.008	U	0.008	U	0.11	U	0.19	U	0.051	U
Hexachlorobutadiene	87-68-3		0.0013	0.046	U	0.045	U	0.61	U	1	U	0.28	U
Hexachlorocyclopentadiene	77-47-4	--	--	0.25	U	0.25	U	3.4	U	5.7	U	1.5	U
Hexachloroethane	67-72-1	--	0.073	0.042	U	0.041	U	0.56	U	0.95	U	0.25	U
High Molecular Weight PAHs	SRP420	--	--	0.141		0.077		8.08		3.28		0.062	
Indeno(1,2,3-cd)pyrene	193-39-5	0.2		0.009	J	0.005	J	0.45		0.26	J	0.025	U
Isophorone	78-59-1	--	--	0.021	U	0.021	U	0.28	U	0.48	U	0.13	U
Low Molecular Weight PAHs	SRP419	--	--	0.041		0.012		1.46		1.41		0.057	
2-Methylnaphthalene	91-57-6	0.07	0.67	0.004	U	0.004	U	0.056	U	0.095	U	0.025	U
2-Methylphenol	95-48-7	--	--	0.021	U	0.021	U	0.28	U	0.48	U	0.13	U
3&4-Methylphenol	65794-96-9	--	--	ND									
4-Methylphenol	106-44-5	--	--	0.021	U	0.021	U	0.28	U	0.48	U	0.13	U
Naphthalene	91-20-3	0.16	2.1	0.008	U	0.008	U	0.11	U	0.19	U	0.051	U
2-Nitroaniline	88-74-4	--	--	0.021	U	0.021	U	0.28	U	0.48	U	0.13	U
3-Nitroaniline	99-09-2	--	--	0.083	U	0.082	U	1.1	U	1.9	U	0.51	U
4-Nitroaniline	100-01-6	--	--	0.083	U	0.082	U	1.1	U	1.9	U	0.51	U
Nitrobenzene	98-95-3	--	--	0.033	U	0.033	U	0.45	U	0.76	U	0.2	U
2-Nitrophenol	88-75-5	--	--	0.033	U	0.033	U	0.45	U	0.76	U	0.2	U
4-Nitrophenol	100-02-7	--	--	0.21	U	0.21	U	2.8	U	4.8	U	1.3	U
n-Nitrosodi-n-propylamine	621-64-7	--	--	0.029	U	0.029	U	0.39	U	0.67	U	0.18	U
n-Nitrosodiphenylamine	86-30-6	--	--	0.021	U	0.021	U	0.28	U	0.48	U	0.13	U
p-Chloroaniline	106-47-8	--	--	0.042	U	0.041	U	0.56	U	0.95	U	0.25	U
p-Chloro-m-cresol	59-50-7	--	--	0.029	U	0.029	U	0.39	U	0.67	U	0.18	U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC = NJDEP. ESC.org.ca Screening Criteria, March 2008
ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above

Values in italics indicate MDL above app

Table A-XV
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-5/2.0-SED-WCBG-5/2.0-SED-WCBG-6/0.0-SED-WCBG-6/2.0-SED-WCBG-7/0.0-SED-WCBG-7/2.0-
2.5(A) 2.5(B) 0.5 2.5 0.5 2.5
Date Sampled: 10/18/2019 10/18/2019 10/16/2019 10/16/2019 10/16/2019 10/16/2019
Depth (ft): 2-2.5 2-2.5 0-0.5 2-2.5 0-0.5 2-2.5
LAB Sample ID: 1178616 1178617 1176401 1176403 1176394 1176397
LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M													
Pentachlorophenol	87-86-5	--	0.017	0.083	U	0.082	U	1.1	U	1.9	U	0.51	U	0.082	U	
Phenanthrene	85-01-8	0.24	1.5	0.007	J	0.004	U	0.44		0.23	J	0.025	U	0.004	U	
Phenol	108-95-2	--	0.13	0.021	U	0.021	U	0.28	U	0.48	U	0.13	U	0.021	U	
Pyrene	129-00-0	0.665	2.6	0.035		0.023		1.9		1		0.062	J	0.004	U	
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	0.021	U	0.021	U	0.28	U	0.48	U	0.13	U	0.021	U	
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	0.083	U	0.082	U	1.1	U	1.9	U	0.51	U	0.082	U	
Total PAHs	130498-29-2	4	45	0.182		0.089		9.54		4.69		0.119		ND		
2,4,5-Trichlorophenol	95-95-4	--	0.003	0.038	U	0.037	U	0.5	U	0.86	U	0.23	U	0.037	U	
2,4,6-Trichlorophenol	88-06-2	--	0.006	0.033	U	0.033	U	0.45	U	0.76	U	0.2	U	0.033	U	
Total SVOC TIC	SRP171	--	--	6.1	J	6.4	JB	82	J	19	J	8.9	J	4.6	J	
Total VOC and SVOC TICs	SRP351	--	--	6.1		6.4		NA		32		NA		4.6		

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XV
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-8/0.0-SED-WCBG-8/2.0-
 0.5 2.5
 Date Sampled: 10/18/2019 10/18/2019
 Depth (ft): 0-0.5 2-2.5
 LAB Sample ID: 1178611 1178613
 LAB: Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M			
Acenaphthene	83-32-9	0.016	0.5	0.005	U	0.043
Acenaphthylene	208-96-8	0.044	0.64	0.005	U	0.039
Acetophenone	98-86-2	--	--	0.024	U	0.023
Anthracene	120-12-7	0.085	1.1	0.084		0.11
Atrazine	1912-24-9	--	--	0.28	U	0.28
Benzaldehyde	100-52-7	--	--	0.094	U	0.094
Benzo(a)pyrene	50-32-8	0.43	1.6	0.32		0.38
Benzo(a)anthracene	56-55-3	0.261	1.6	0.32		0.43
Benzo(b)fluoranthene	205-99-2	--	1.8	0.32		0.42
Benzo(ghi)perylene	191-24-2	0.17	--	0.4		0.27
Benzo(k)fluoranthene	207-08-9	0.24	--	0.1		0.2
1,1-Biphenyl	92-52-4	--	--	0.024	U	0.023
Bis(2-Chloroethoxy)methane	111-91-1	--	--	0.024	U	0.023
bis(2-Chloroethyl)ether	111-44-4	--	--	0.033	U	0.033
bis(2-Chloroisopropyl)ether	108-60-1	--	--	0.028	U	0.028
bis(2-Ethylhexyl)phthalate	117-81-7	<i>0.182</i> 16	<i>2.646</i> 51	1.1		0.23
4-Bromophenyl-phenylether	101-55-3	--	--	0.033	U	0.033
Butyl benzyl phthalate	85-68-7	--	0.063	0.094	U	0.094
Caprolactam	105-60-2	--	--	0.047	U	0.047
Carbazole	86-74-8	--	--	0.024	U	0.032
2-Chloronaphthalene	91-58-7	--	--	0.009	U	0.009
2-Chlorophenol	95-57-8	--	0.008	0.024	U	0.023
4-Chlorophenyl-phenylether	7005-72-3	--	--	0.028	U	0.028
Chrysene	218-01-9	<i>0.384</i>	2.8	0.34		0.41
Dibenz(a,h)anthracene	53-70-3	0.063	0.26	0.094		0.068
Dibenzofuran	132-64-9	--	--	0.024	U	0.023
3,3'-Dichlorobenzidine	91-94-1	--	--	0.14	U	0.14
2,4-Dichlorophenol	120-83-2	--	0.005	0.028	U	0.028
Diethyl phthalate	84-66-2	--	0.006	0.094	U	0.094
2,4-Dimethyl phenol	105-67-9	--	--	0.043	U	0.042
Dimethyl phthalate	131-11-3	--	--	0.094	U	0.094
Di-n-butyl phthalate	84-74-2	--	0.058	0.094	U	0.094

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

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NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XV
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-8/0.0-SED-WCBG-8/2.0-
 0.5 2.5
 Date Sampled: 10/18/2019 10/18/2019
 Depth (ft): 0-0.5 2-2.5
 LAB Sample ID: 1178611 1178613
 LAB: Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M				
4,6-Dinitro-2-methylphenol	534-52-1	--	--	0.33	U	0.33	U
2,4-Dinitrophenol	51-28-5	--	--	0.47	U	0.47	U
Dinitrotoluene (2,4-2,6- mixture)	25321-14-6	--	--	ND		ND	
2,4-Dinitrotoluene	121-14-2	--	--	0.094	U	0.094	U
2,6-Dinitrotoluene	606-20-2	--	--	0.033	U	0.033	U
Di-n-octyl phthalate	117-84-0	--	--	0.094	U	0.094	U
1,4-Dioxane	123-91-1	--	--	0.14	U	0.14	U
Fluoranthene	206-44-0	0.6	5.1	0.51		0.68	
Fluorene	86-73-7	0.019	0.54	0.005	U	0.078	
Hexachlorobenzene	118-74-1	0.02	--	0.009	U	0.009	U
Hexachlorobutadiene	87-68-3	--	0.0013	0.052	U	0.052	U
Hexachlorocyclopentadiene	77-47-4	--	--	0.28	U	0.28	U
Hexachloroethane	67-72-1	--	0.073	0.047	U	0.047	U
High Molecular Weight PAHs	SRP420	--	--	2.614		3.248	
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	--	0.15		0.21	
Isophorone	78-59-1	--	--	0.024	U	0.023	U
Low Molecular Weight PAHs	SRP419	--	--	0.741		1.592	
2-Methylnaphthalene	91-57-6	0.07	0.67	0.031	J	0.042	J
2-Methylphenol	95-48-7	--	--	0.024	U	0.023	U
3&4-Methylphenol	65794-96-9	--	--	ND		ND	
4-Methylphenol	106-44-5	--	--	0.024	U	0.023	U
Naphthalene	91-20-3	0.16	2.1	0.022	J	0.04	
2-Nitroaniline	88-74-4	--	--	0.024	U	0.023	U
3-Nitroaniline	99-09-2	--	--	0.094	U	0.094	U
4-Nitroaniline	100-01-6	--	--	0.094	U	0.094	U
Nitrobenzene	98-95-3	--	--	0.038	U	0.037	U
2-Nitrophenol	88-75-5	--	--	0.038	U	0.037	U
4-Nitrophenol	100-02-7	--	--	0.24	U	0.23	U
n-Nitrosodi-n-propylamine	621-64-7	--	--	0.033	U	0.033	U
n-Nitrosodiphenylamine	86-30-6	--	--	0.024	U	0.023	U
p-Chloroaniline	106-47-8	--	--	0.047	U	0.047	U
p-Chloro-m-cresol	59-50-7	--	--	0.033	U	0.033	U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XV
Summary of Semi-Volatile Organic Compounds (SVOCs) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-8/0.0-SED-WCBG-8/2.0-
 0.5 2.5
 Date Sampled: 10/18/2019 10/18/2019
 Depth (ft): 0-0.5 2-2.5
 LAB Sample ID: 1178611 1178613
 LAB: Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M				
Pentachlorophenol	87-86-5	--	0.017	0.094	U	0.094	U
Phenanthrene	85-01-8	0.24	1.5	0.094		0.56	
Phenol	108-95-2	--	0.13	0.024	U	0.023	U
Pyrene	129-00-0	0.665	2.6	0.57		0.86	
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	0.024	U	0.023	U
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	0.094	U	0.094	U
Total PAHs	130498-29-2	4	45	3.355		4.84	
2,4,5-Trichlorophenol	95-95-4	--	0.003	0.043	U	0.042	U
2,4,6-Trichlorophenol	88-06-2	--	0.006	0.038	U	0.037	U
Total SVOC TIC	SRP171	--	--	13	J	7.1	J
Total VOC and SVOC TICs	SRP351	--	--	NA		7.19	

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XVI
Summary of Metals in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.:	SED-10-A/2.0-2.5 SED-10-B/2.0-2.5 SED-10-C/2.0-2.5 SED-WCBG-1/0.0-SED-WCBG-1/2.0-SED-WCBG-2/0-0.5						2.5	0.5
Date Sampled:	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/18/2019	
Depth (ft):	2-2.5	2-2.5	2-2.5	0-0.5	2-2.5	2-2.5	0-0.5	
LAB Sample ID:	1175350	1175353	1175340	1175345	1175347	1178618		
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M							
Aluminum	7429-90-5	--	18000	12500	9100	7900	13400	18300	14200	
Antimony	7440-36-0	--	9.3	1.34	U	3.59	J	1.67	U	1.85
Arsenic	7440-38-2	8.2	70	4.66		7.2		4.5		7.07
Barium	7440-39-3	--	48	79.7		147		20		52.3
Beryllium	7440-41-7	--	--	0.568		1.15		0.676		0.93
Cadmium	7440-43-9	1.2	9.6	0.0791	U	0.434	U	0.0981	U	0.148
Calcium	7440-70-2	--	--	583		1860		65800	1250	1030
Chromium	7440-47-3	81	370	21.8		23.7		14.5		28.4
Cobalt	7440-48-4	--	10	8.23		11.9		5.03		11.7
Copper	7440-50-8	34	270	25.7		99.6		30.8	76.9	32.2
Iron	7439-89-6	--	--	20000		21500		16300	26100	22900
Lead	7439-92-1	47	218	21		111		18	66.1	27.3
Magnesium	7439-95-4	--	--	5020		5250		2990	4590	4370
Manganese	7439-96-5	--	260	124		148		211	269	422
Mercury	7439-97-6	0.15	0.71	0.017	U	0.0176	U	0.0281	J	0.052
Nickel	7440-02-0	21	52	18.9		30.3		15.4	21.6	21.6
Potassium	7440-09-7	--	--	2270		2330		1540	2410	2010
Selenium	7782-49-2	--	1	1.19	U	1.3	U	1.47	U	2.22
Silver	7440-22-4	1	3.7	0.758	J	0.975		0.799	J	1.14
Sodium	7440-23-5	--	--	575		777		1200	2910	1730
Thallium	7440-28-0	--	--	1.03	U	1.69	J	1.28	U	1.93
Vanadium	7440-62-2	--	57	31.2		21.2		19.3	33	35
Zinc	7440-66-6	150	410	69.3		936		73.6	210	97.5

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XVI
Summary of Metals in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.:	SED-WCBG-2/2.0-SED-WCBG-3/0.0-SED-WCBG-3/2.5-SED-WCBG-4/0.0-SED-WCBG-4/1.0-SED-WCBG-5/0.0-					
	2.5	0.5	3.0	0.5	1.5	0.5
Date Sampled:	10/18/2019	10/15/2019	10/15/2019	10/16/2019	10/16/2019	10/18/2019
Depth (ft):	2-2.5	0-0.5	2.5-3	0-0.5	1-1.5	0-0.5
LAB Sample ID:	1178620	1175341	1175344	1176398	1176400	1178614
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
Aluminum	7429-90-5	--	18000	10900	10400	20900	8340	6860	5800		
Antimony	7440-36-0	--	9.3	1.39	U	2.19	U	4.43	U	4.02	J
Arsenic	7440-38-2	8.2	70	3.18		24.8		40.5		10	
Barium	7440-39-3	--	48	72.2		56.2		111		42	
Beryllium	7440-41-7	--	--	0.674		1.22		1.96		1.23	
Cadmium	7440-43-9	1.2	9.6	0.465		1.33		9.98		1.41	
Calcium	7440-70-2	--	--	688		1110		2050		5830	
Chromium	7440-47-3	81	370	17.4		46.1		55.9		34.5	
Cobalt	7440-48-4	--	10	7.68		45		18		17.4	
Copper	7440-50-8	34	270	23.4		2090		440		144	
Iron	7439-89-6	--	--	17600		28100		36500		20700	
Lead	7439-92-1	47	218	7.07		328		272		164	
Magnesium	7439-95-4	--	--	4710		2750		5160		2930	
Manganese	7439-96-5	--	260	135		133		177		140	
Mercury	7439-97-6	0.15	0.71	0.0159	U	0.9		0.826		0.103	J
Nickel	7440-02-0	21	52	16		194		151		45.7	
Potassium	7440-09-7	--	--	3130		1360		2690		1230	
Selenium	7782-49-2	--	1	1.23	U	1.93	U	8.13	J	2.04	U
Silver	7440-22-4	1	3.7	0.328	U	2.93		2.22	J	0.544	U
Sodium	7440-23-5	--	--	453		5060		8230		1460	
Thallium	7440-28-0	--	--	1.07	U	1.67	U	3.39	U	1.77	U
Vanadium	7440-62-2	--	57	22.3		45.1		78.6		26.7	
Zinc	7440-66-6	150	410	45.7		1400		447		544	
										171	
											239

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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Underline indicates concentrations above the ESC ER-M

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Table A-XVI
Summary of Metals in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-5/2.0-SED-WCBG-5/2.0-SED-WCBG-6/0.0-SED-WCBG-6/2.0-SED-WCBG-7/0.0-SED-WCBG-7/2.0-
2.5(A) 2.5(B) 0.5 2.5 0.5 2.5
Date Sampled: 10/18/2019 10/18/2019 10/16/2019 10/16/2019 10/16/2019 10/16/2019
Depth (ft): 2-2.5 2-2.5 0-0.5 2-2.5 0-0.5 2-2.5
LAB Sample ID: 1178616 1178617 1176401 1176403 1176394 1176397
LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
Aluminum	7429-90-5	--	18000	7590	6210	13000	7990	13000	14500		
Antimony	7440-36-0	--	9.3	2.03	U	2	U	1.87	U	1.98	U
Arsenic	7440-38-2	8.2	70	6.06		3.09	J	30.4		14.2	
Barium	7440-39-3	--	48	65.9		38.8		101		43.7	
Beryllium	7440-41-7	--	--	0.891		0.42	J	1.18		0.668	
Cadmium	7440-43-9	1.2	9.6	0.119	U	0.485	J	4.55		1.34	
Calcium	7440-70-2	--	--	22900		29000		1780		922	
Chromium	7440-47-3	81	370	13.6		11.5		59.4		17	
Cobalt	7440-48-4	--	10	9.1		7.57		9.07		6.58	
Copper	7440-50-8	34	270	83.2		9.94		340		43.6	
Iron	7439-89-6	--	--	18400		15200		22200		13700	
Lead	7439-92-1	47	218	49.4		7.42		209		64.4	
Magnesium	7439-95-4	--	--	21900		9040		4030		2560	
Manganese	7439-96-5	--	260	1060		454		133		132	
Mercury	7439-97-6	0.15	0.71	0.0207	J	0.0188	J	1.19		0.216	
Nickel	7440-02-0	21	52	15.5		8.46		56.1		13.1	
Potassium	7440-09-7	--	--	1050		1250		1930		1290	
Selenium	7782-49-2	--	1	1.79	U	1.76	U	2.52	U	1.65	U
Silver	7440-22-4	1	3.7	0.478	U	0.47	U	1.2	J	0.439	U
Sodium	7440-23-5	--	--	2740		1930		5640		3030	
Thallium	7440-28-0	--	--	1.55	U	1.53	U	2.19	U	1.43	U
Vanadium	7440-62-2	--	57	19		16.5		66.4		25.8	
Zinc	7440-66-6	150	410	698		38.4		394		136	
										101	
											38.4

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

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Table A-XVI
Summary of Metals in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-8/0.0-SED-WCBG-8/2.0-
 0.5 2.5
 Date Sampled: 10/18/2019 10/18/2019
 Depth (ft): 0-0.5 2-2.5
 LAB Sample ID: 1178611 1178613
 LAB: Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M		
Aluminum	7429-90-5	--	18000	9740	10300
Antimony	7440-36-0	--	9.3	1.64	U
Arsenic	7440-38-2	8.2	70	18.4	12.6
Barium	7440-39-3	--	48	38.4	42.6
Beryllium	7440-41-7	--	--	0.839	0.832
Cadmium	7440-43-9	1.2	9.6	2.32	0.942
Calcium	7440-70-2	--	--	550	871
Chromium	7440-47-3	81	370	31.4	20
Cobalt	7440-48-4	--	10	12.7	6.54
Copper	7440-50-8	34	270	81.3	40.6
Iron	7439-89-6	--	--	12000	16000
Lead	7439-92-1	47	218	116	52.4
Magnesium	7439-95-4	--	--	1800	2100
Manganese	7439-96-5	--	260	70.1	153
Mercury	7439-97-6	0.15	0.71	0.812	0.0738
Nickel	7440-02-0	21	52	46.1	16
Potassium	7440-09-7	--	--	1260	1780
Selenium	7782-49-2	--	1	2.07	J
Silver	7440-22-4	1	3.7	0.875	J
Sodium	7440-23-5	--	--	2520	2110
Thallium	7440-28-0	--	--	1.26	U
Vanadium	7440-62-2	--	57	34.7	25.8
Zinc	7440-66-6	150	410	316	136

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

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Underline indicates concentrations above the ESC ER-M

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NA = Not Analyzed

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MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XVII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.:	SED-10-A/0.0-0.5	SED-10-A/0.5-1.0	SED-10-A/2.0-2.5	SED-10-B/0.0-0.5	SED-10-B/0.5-1.0	SED-10-B/2.0-2.5
Date Sampled:	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/15/2019
Depth (ft):	0-0.5	0.5-1	2-2.5	0-0.5	0.5-1	2-2.5
LAB Sample ID:	1175348DL	1175349	1175350	1175351	1175352	1175353
LAB:	Eurofins Lancaster					

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M												
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	310		17		3.4	U	4.6	U	3.8	U	3.6	U
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	470		36		3.4	U	4.6	U	3.8	U	3.6	U
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	470		46		3.4	U	4.6	U	3.8	U	3.6	U
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	830		71		3.5	J	4.6	U	3.8	U	3.6	U
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	2100		170		3.5	J	4.6	U	3.8	U	3.6	U
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	7.4	U	3.8	U	3.4	U	4.6	U	3.8	U	3.6	U
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	39		3.8	U	3.4	U	4.6	U	3.8	U	3.6	U
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	280		35		3.4	U	4.6	U	3.8	U	3.6	U
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	480		60		3.4	U	4.6	U	3.8	U	3.6	U
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	800		94		3.4	U	4.6	U	3.8	U	3.6	U
EPH, TOTAL FRACTIONATED	SRP340	--	--	2900		260		3.5	J	4.6	U	3.8	U	3.6	U

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XVII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.:	SED-10-C/0.0-0.5	SED-10-C/0.5-1.0	SED-10-C/2.0-2.5	SED-WCBG-1/0.0-SED-WCBG-1/0.5-SED-WCBG-1/2.0-	0.5	1.0	2.5
Date Sampled:	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/15/2019	10/15/2019
Depth (ft):	0-0.5	0.5-1	2-2.5	0-0.5	0.5-1	2-2.5	
LAB Sample ID:	1175338	1175339	1175340	1175345DL	1175346DL	1175347	
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M													
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	4.1	U	3.8	U	3.8	U	9.2	U	3.9	U	4.7	U	
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	4.1	U	5.3	J	3.8	U	9.2	J	3.9	U	4.7	U	
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	4.1	U	14		3.8	U	87		25		8.1	J	
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	17		29		4.7	J	1100		350		70		
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	17		48		4.7	J	1200		370		78		
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	4.1	U	3.8	U	3.8	U	23	U	7.9	U	4.7	U	
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	4.1	U	3.8	U	3.8	U	23	U	7.9	U	4.7	U	
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	5.5	J	8.1	J	3.8	U	210		67		16		
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	12	J	66		3.8	U	2000		580		180		
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	18		74		3.8	U	2200		650		200		
EPH, TOTAL FRACTIONATED	SRP340	--	--	35		120		4.7	J	3400		1000		280		

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XVII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.:	SED-WCBG-2/0.0-SED-WCBG-2/0.5-SED-WCBG-2/2.0-SED-WCBG-3/0.0-SED-WCBG-3/0.5-SED-WCBG-3/0.5-					
	0.5	1.0	2.5	0.5	1.0(A)	1.0(B)
Date Sampled:	10/18/2019	10/18/2019	10/18/2019	10/15/2019	10/15/2019	10/15/2019
Depth (ft):	0-0.5	0.5-1	2-2.5	0-0.5	0.5-1	0.5-1
LAB Sample ID:	1178618	1178619	1178620	1175341	1175342	1175343
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M	0.5	1.0	2.5	0.5	1.0(A)	1.0(B)
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	4.2	U	3.9	U	3.3	31
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	4.2	U	3.9	U	3.3	120
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	4.2	U	3.9	U	3.3	220
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	4.2	U	4.4	J	3.3	740
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	4.2	U	4.4	J	3.3	1100
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	4.2	U	3.9	U	3.3	4.6
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	4.2	U	3.9	U	3.3	U
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	4.2	U	3.9	U	3.3	U
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	4.2	U	3.9	U	3.3	84
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	4.2	U	3.9	U	3.3	170
EPH, TOTAL FRACTIONATED	SRP340	--	--	4.2	U	4.4	J	3.3	1400
									22
									29
									96
									140
									180
									230
									400
									410
									76
									80
									120
									150
									200
									230
									890
									1000

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XVII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-3/2.5-SED-WCBG-4/0.0-SED-WCBG-4/0.5-SED-WCBG-4/1.0-SED-WCBG-5/0.0-SED-WCBG-5/0.5-
3.0 0.5 1.0 1.5 0.5 1.0
Date Sampled: 10/15/2019 10/16/2019 10/16/2019 10/16/2019 10/18/2019 10/18/2019
Depth (ft): 2.5-3 0-0.5 0.5-1 1-1.5 0-0.5 0.5-1
LAB Sample ID: 1175344 1176398 1176399 1176400 1178614 1178615
LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M													
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	56		4.2	U	3.9	U	3.8	U	3.5	U	3.5	U	
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	220		4.2	U	3.9	U	3.8	U	3.8	J	3.5	U	
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	360		4.2	U	3.9	U	9.6	J	7.6	J	3.8	J	
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	620		6.6	J	12	J	86		11	J	4.8	J	
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	1300		6.6	J	12	J	95		23		8.6	J	
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	7.9	U	4.2	U	3.9	U	3.8	U	3.5	U	3.5	U	
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	13	J	4.2	U	3.9	U	3.8	U	3.5	U	3.5	U	
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	160		4.2	U	3.9	U	7.7	J	3.5	U	3.5	U	
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	200		9	J	23		130		3.5	U	3.5	U	
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	380		9	J	23		140		3.5	U	3.5	U	
EPH, TOTAL FRACTIONATED	SRP340	--	--	1600		16		34		230		23		8.6	J	

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XVII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.:	SED-WCBG-5/2.0-SED-WCBG-5/2.0-SED-WCBG-6/0.0-SED-WCBG-6/0.5-SED-WCBG-6/2.0-SED-WCBG-7/0.0-					
	2.5(A)	2.5(B)	0.5	1.0	2.5	0.5
Date Sampled:	10/18/2019	10/18/2019	10/16/2019	10/16/2019	10/16/2019	10/16/2019
Depth (ft):	2-2.5	2-2.5	0-0.5	0.5-1	2-2.5	0-0.5
LAB Sample ID:	1178616	1178617	1176401	1176402DL	1176403DL	1176394
LAB:	Eurofins	Lancaster	Eurofins	Lancaster	Eurofins	Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M								
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	3.7	U	3.6	U	85	92	77	4.4 U
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	3.7	U	3.6	U	280	300	250	4.4 U
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	3.7	U	3.6	U	340	420	190	4.4 U
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	3.8	J	3.6	U	810	790	650	4.4 U
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	3.8	J	3.6	U	1500	1600	1200	4.4 U
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	3.7	U	3.6	U	4.9	U	20	4.2 J
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	3.7	U	3.6	U	10	J	46	11 J
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	3.7	U	3.6	U	150	280	79	4.4 U
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	3.7	U	3.6	U	340	400	150	5.9 J
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	3.7	U	3.6	U	500	750	240	5.9 J
EPH, TOTAL FRACTIONATED	SRP340	--	--	3.8	J	3.6	U	2000	2400	1400	5.9 J

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

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Table A-XVII
Summary of Extractable Petroleum Hydrocarbons (EPH) in Sediment (Salt)
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek Upper (Background)

Sample No.: SED-WCBG-7/0.5-SED-WCBG-7/0.5-SED-WCBG-7/2.0-SED-WCBG-8/0.0-SED-WCBG-8/0.5-SED-WCBG-8/2.0-
 1.0(A) 1.0(B) 2.5 0.5 1.0 2.5
 Date Sampled: 10/16/2019 10/16/2019 10/16/2019 10/18/2019 10/18/2019 10/18/2019
 Depth (ft): 0.5-1 0.5-1 2-2.5 0-0.5 0.5-1 2-2.5
 LAB Sample ID: 1176395 1176396 1176397 1178611DL 1178612 1178613
 LAB: Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster Eurofins Lancaster

Parameter (mg/kg)	CAS No.	ESC ER-L	ESC ER-M									
EPH ALIPHATIC FRACTION (C09-C12)	SRP248	--	--	4.9	U	4.7	U	3.6	U	58	41	4.1 U
EPH ALIPHATIC FRACTION (C12-C16)	SRP259	--	--	4.9	U	4.7	U	3.6	U	350	160	8.9 J
EPH ALIPHATIC FRACTION (C16-C21)	SRP260	--	--	4.9	U	4.7	U	3.6	U	420	220	13 J
EPH ALIPHATIC FRACTION (C21-C40)	SRP271	--	--	4.9	U	6.7	J	3.6	U	630	440	89
EPH, TOTAL ALIPHATIC FRACTION	SRP282	--	--	4.9	U	6.7	J	3.6	U	1500	860	110
EPH, AROMATIC FRACTION (C10-C12)	SRP293	--	--	4.9	U	4.7	U	3.6	U	4.2	U	4.9 U
EPH, AROMATIC FRACTION (C12-C16)	SRP306	--	--	4.9	U	4.7	U	3.6	U	13	J	4.9 U
EPH, AROMATIC FRACTION (C16-C21)	SRP317	--	--	4.9	U	4.7	U	3.6	U	180	68	16
EPH, AROMATIC FRACTION (C21-C36)	SRP328	--	--	4.9	U	4.7	U	3.6	U	220	180	37
EPH, TOTAL AROMATIC FRACTION	SRP339	--	--	4.9	U	4.7	U	3.6	U	410	250	52
EPH, TOTAL FRACTIONATED	SRP340	--	--	4.9	U	6.7	J	3.6	U	1900	1100	160

ESC = NJDEP Ecological Screening Criteria, March 2009

ESC ER-L = Saline Water Sediment Effects Range Low (per NJDEP ESC)

ESC ER-M = Saline Water Sediment Effects Range Medium (per NJDEP ESC)

Bold indicates concentrations above the ESC ER-L

Underline indicates concentrations above the ESC ER-M

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

MDL = Method Detection Limit

U = Compound not detected above MDL

Values in italics indicate MDL above applicable criterion.

Table A-XVIII
Physical and Miscellaneous Parameters
Former Chevron Refinery Facility Perth Amboy, New Jersey

Woodbridge Creek

Sample No.:	SED-06-A/0.0-0.5	SED-22-A/0.0-0.5	SED-22-A/0.0-0.5	SED-22-B/0.0-0.5	SED-22-B/0.0-0.5	SED-22-C/0.0-0.5	SED-22-C/0.0-0.5
Date Sampled:	10/2/2019	9/25/2019	9/25/2019	9/25/2019	9/25/2019	9/26/2019	9/26/2019
Depth (ft):	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
LAB Sample ID:	1165599	1159737	1159746	1159740	1159747	1160981DL	1160981
LAB:	Eurofins Lancaster						
Parameter	Units						
Grain Size 75 mm	% Passing	100	NA	100	NA	100	NA
Grain Size 37.5 mm	% Passing	100	NA	100	NA	100	NA
Grain Size 19 mm	% Passing	100	NA	98.7	NA	100	NA
Grain Size 4.75 mm	% Passing	99.3	NA	97.1	NA	99.9	NA
Grain Size 3.35 mm	% Passing	99.3	NA	96.8	NA	99.5	NA
Grain Size 2.36 mm	% Passing	99.1	NA	96.6	NA	98.7	NA
Grain Size 1.18 mm	% Passing	98.5	NA	95.7	NA	97	NA
Grain Size 0.6mm	% Passing	74.7	NA	94.4	NA	94.3	NA
Grain Size 0.3 mm	% Passing	61.1	NA	92.6	NA	92.2	NA
Grain Size 0.15 mm	% Passing	55.5	NA	90	NA	90.5	NA
Grain Size 0.075 mm	% Passing	51.2	NA	86.7	NA	88.8	NA
Grain Size 0.064 mm	% Passing	55	NA	86	NA	87	NA
Grain Size 0.05 mm	% Passing	60	NA	83	NA	83	NA
Grain Size 0.02 mm	% Passing	53	NA	67	NA	67	NA
Grain Size 0.005 mm	% Passing	26	NA	39	NA	25.5	NA
Grain Size 0.002 mm	% Passing	15	NA	25	NA	16	NA
Grain Size 0.001 mm	% Passing	6	NA	16	NA	12	NA
Percent Gravel	%	0.66	J	2.9	NA	0	U
Percent Sand	%	48.2	NA	10.3	NA	11.1	NA
Percent Silt	%	25.2	NA	47.7	NA	63.3	NA
Percent Clay	%	26	NA	39	NA	25.5	NA
pH	su	NA	7.48	NA	8.06	NA	7.58
Total Organic Carbon	mg/kg	NA	25600	NA	20400	NA	29400

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

U = Compound not detected above MDL

Table A-XVIII
Physical and Miscellaneous Parameters
Former Chevron Refinery Facility Perth Amboy, New Jersey

Woodbridge Creek

Sample No.:	SED-23-A/0.0-0.5	SED-23-A/0.0-0.5	SED-23-B/0.0-0.5	SED-23-B/0.0-0.5	SED-23-C/0.0-0.5	SED-23-C/0.0-0.5
Date Sampled:	10/2/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019	10/2/2019
Depth (ft):	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
LAB Sample ID:	1165596	1165602	1165590	1165600	1165593	1165601
LAB:	Eurofins Lancaster					

Parameter	Units						
Grain Size 75 mm	% Passing	NA	100	NA	100	NA	100
Grain Size 37.5 mm	% Passing	NA	100	NA	100	NA	100
Grain Size 19 mm	% Passing	NA	97.7	NA	100	NA	100
Grain Size 4.75 mm	% Passing	NA	81.3	NA	98.5	NA	92.3
Grain Size 3.35 mm	% Passing	NA	79.7	NA	97	NA	87.3
Grain Size 2.36 mm	% Passing	NA	78	NA	94.7	NA	80.1
Grain Size 1.18 mm	% Passing	NA	72.4	NA	90.2	NA	55.9
Grain Size 0.6mm	% Passing	NA	62.4	NA	80.4	NA	38.5
Grain Size 0.3 mm	% Passing	NA	52.6	NA	54	NA	22.4
Grain Size 0.15 mm	% Passing	NA	43.6	NA	12.3	NA	7.2
Grain Size 0.075 mm	% Passing	NA	38.6	NA	7.4	NA	5
Grain Size 0.064 mm	% Passing	NA	35	NA	6.5	NA	4.5
Grain Size 0.05 mm	% Passing	NA	28	NA	5	NA	3
Grain Size 0.02 mm	% Passing	NA	17.5	NA	3	NA	2
Grain Size 0.005 mm	% Passing	NA	9.5	NA	2	NA	0 U
Grain Size 0.002 mm	% Passing	NA	4	NA	2	NA	0 U
Grain Size 0.001 mm	% Passing	NA	2	NA	2	NA	0 U
Percent Gravel	%	NA	18.7	NA	1.5	NA	7.8
Percent Sand	%	NA	42.7	NA	91	NA	87.3
Percent Silt	%	NA	29.1	NA	5.4	NA	5
Percent Clay	%	NA	9.5	NA	2	NA	0 U
pH	su	7.58	NA	7.88	NA	7.81	NA
Total Organic Carbon	mg/kg	62300	NA	16000	NA	7420	NA

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

U = Compound not detected above MDL

Table A-XVIII
Physical and Miscellaneous Parameters
Former Chevron Refinery Facility Perth Amboy, New Jersey

Woodbridge Creek

Sample No.:	SED-24-A/0.0-0.5	SED-24-A/0.0-0.5	SED-24-B/0.0-0.5	SED-24-B/0.0-0.5	SED-24-C/0.0-0.5	SED-24-C/0.0-0.5
Date Sampled:	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019	10/4/2019
Depth (ft):	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
LAB Sample ID:	1167968	1167963	1167972	1167964	1167975	1167965
LAB:	Eurofins Lancaster					

Parameter	Units							
Grain Size 75 mm	% Passing	NA	100	NA	100	NA	100	
Grain Size 37.5 mm	% Passing	NA	100	NA	100	NA	100	
Grain Size 19 mm	% Passing	NA	100	NA	100	NA	100	
Grain Size 4.75 mm	% Passing	NA	100	NA	99.6	NA	99.7	
Grain Size 3.35 mm	% Passing	NA	99.9	NA	99.4	NA	99.3	
Grain Size 2.36 mm	% Passing	NA	99.8	NA	98.9	NA	98.6	
Grain Size 1.18 mm	% Passing	NA	99.6	NA	98.5	NA	97	
Grain Size 0.6mm	% Passing	NA	98.9	NA	89.2	NA	92.9	
Grain Size 0.3 mm	% Passing	NA	97.4	NA	45.5	NA	86.2	
Grain Size 0.15 mm	% Passing	NA	61.8	NA	16.5	NA	77.7	
Grain Size 0.075 mm	% Passing	NA	29.7	NA	8.4	NA	69.5	
Grain Size 0.064 mm	% Passing	NA	26	NA	7	NA	65.5	
Grain Size 0.05 mm	% Passing	NA	22	NA	5	NA	58	
Grain Size 0.02 mm	% Passing	NA	18	NA	3	NA	42	
Grain Size 0.005 mm	% Passing	NA	9	NA	1.5	NA	24.5	
Grain Size 0.002 mm	% Passing	NA	5	NA	1.5	NA	13	
Grain Size 0.001 mm	% Passing	NA	4	NA	1.5	NA	6	
Percent Gravel	%	NA	0 U	NA	0 U	NA	0 U	
Percent Sand	%	NA	70.3	NA	91.3	NA	30.2	
Percent Silt	%	NA	20.7	NA	6.9	NA	45	
Percent Clay	%	NA	9	NA	1.5	NA	24.5	
pH	su	7.83	NA	7.29	NA	7.53	NA	
Total Organic Carbon	mg/kg	35000	NA	4380	NA	71200	NA	

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

U = Compound not detected above MDL

Table A-XVIII
Physical and Miscellaneous Parameters
Former Chevron Refinery Facility Perth Amboy, New Jersey
Woodbridge Creek

Sample No.:	SED-25-A/0.0-0.5	SED-25-B/0.0-0.5	SED-25-C/0.0-0.5
Date Sampled:	10/25/2019	10/24/2019	10/24/2019
Depth (ft):	0-0.5	0-0.5	0-0.5
LAB Sample ID:	1184595	1183319	1183317
LAB:	Eurofins Lancaster	Eurofins Lancaster	Eurofins Lancaster

Parameter	Units			
Grain Size 75 mm	% Passing	100	100	100
Grain Size 37.5 mm	% Passing	100	100	100
Grain Size 19 mm	% Passing	89.8	99.7	100
Grain Size 4.75 mm	% Passing	81.7	93.1	98.5
Grain Size 3.35 mm	% Passing	80.2	89.4	96.4
Grain Size 2.36 mm	% Passing	78.3	85.5	92.7
Grain Size 1.18 mm	% Passing	74	78.7	91.3
Grain Size 0.6mm	% Passing	68.1	65.2	89.8
Grain Size 0.3 mm	% Passing	57.9	21.6	85.9
Grain Size 0.15 mm	% Passing	43.5	7.1	74.7
Grain Size 0.075 mm	% Passing	29.5	4.8	57.2
Grain Size 0.064 mm	% Passing	27	4	54
Grain Size 0.05 mm	% Passing	22	4	48
Grain Size 0.02 mm	% Passing	15	1.5	41
Grain Size 0.005 mm	% Passing	6	1	22
Grain Size 0.002 mm	% Passing	4	1	15.5
Grain Size 0.001 mm	% Passing	3	1	10
Percent Gravel	%	18.4	J	6.9
Percent Sand	%	52.2		88.4
Percent Silt	%	23.5		3.8
Percent Clay	%	6		1
pH	su	7.79		7.88
Total Organic Carbon	mg/kg	44300		47400
				52500

ND = Not Detected

NA = Not Analyzed

J = Estimated value below sample reporting limit

U = Compound not detected above MDL